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The decision-making process concerning workplace innovation KLPD Case Study

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CASE STUDY: **KORPS LANDELIJKE POLITIEDIENSTEN (KLPD)**

Driebergen-Rijsenburg, the Netherlands

Space provider: Dutch Government Building Agency (GBA)

Research: Bibiana Güiza
Theo van der Voordt

Date: March 2003

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Preface

This case study is one in a series on workplace innovation. This issue is alive in many companies and not for profit organizations. Since 1990 the subject has been studied by many professionals. Yet a consistent knowledge base is not in place. For that reason the Center for People and Buildings (Delft, The Netherlands) aims at developing in depth datasets that enables to answer questions that are being asked by almost everyone engaged in a innovative workplace project.

How do we decide, what are the benefits, what are the costs? Does it work better in an innovative office, what are the long term effects of changes in office layout and office use? These questions become even more relevant when we consider the changes that usually come with design and implementation of an innovative office. Those are mainstream developments like changes in individual and collective ways of working. Dealing differently with concepts of performance requires a new mindset. Changes create a battle for the free space in our brains.

Lots of innovative office projects are basically founded on efficiency objectives: cost cutting of input factors like the reduction of real estate costs and reduction of communication times. This raises the question with respect to efficiency: where is the end? Can we do business on increasingly less square meters? What are consequences for employee health, what are consequences for the organizational image and so on and so forth.

It is the mission of the Center for People and Buildings to contribute to the creation of a body of knowledge on the relationship between people, work and work environments, not necessarily limited to office buildings or administrative knowledge organizations.

This case study is part of a project on Decision Making. It is a learning project were generic knowledge on decision making is tested in daily office innovation practice. The lessons learned in the case studies are the feedback to the conceptual framework which integrates workplace solution, development and decision making processes with performance (efficiency, productivity and user satisfaction) of both the solution and the processes. The final deliverable will be a toolkit to support workplace decision making.

This case study was done at the KLPD, which is the headquarters of the Dutch police. I like to thank our contacts at KLPD, Mr. Mijndert Demeijer and Mr. Joop ter Schure for their support. The study was conducted by the Delft University of Technology, Faculty of Architecture, by Bibiana Güiza and Theo van der Voordt in collaboration with the Government Buildings Agency. The support from Mr. Christiaan van de Heijden (GSA) was indispensable. The role of the Center for People and Buildings now is to deliver more case studies and to integrate all results into an accessible tool.

I hope this study will contribute to a better understanding of the successes and failures in innovative office development, design, implementation and use.

Wim Pullen
Director Center for People and Buildings
Delft, the Netherlands
March 2003

Summary

Objectives of this case study

The central theme of this report is the decision-making process concerning the planning and implementation of workplace innovations. Innovative workplace solutions are intended to match organizational needs, user demands and user work patterns with space and technology in the best possible way. Workplace innovation is being carried out around the globe. Innovative concepts are implemented mainly to increase productivity, reduce accommodation costs and increase labour satisfaction. Implementing and running these concepts presents both space users and space providers with great challenges. Space providers face difficulties in developing the product and steering the process, and often opt for 'innovative' solutions without knowing whether these solutions will support the organizational objectives and employee needs. Space providers and users face high levels of uncertainty that may lead to unexpected negative effects, change resistance, etc. Despite the knowledge gained and the evaluation models developed so far, we are still faced with a lack of systematically recorded and reliable data. Organizations require process architecture (data and tools) that helps to deliver solutions that truly meet their demands and objectives as well as those of other stakeholders. In the development of process architecture, case studies are used to collect evidence. This study is one in a series of cases studies aimed at collecting information relevant to the development of a workplace innovation decision support tool.

The Korps Landelijke Politiediensten (KLPD) in Driebergen has implemented an innovative workplace concept to fit the new demands of the organization while complying with the regulations laid down in the Driebergen zoning plan. The main research questions of this study are:

- How was the decision-making process undertaken during the development of innovative workplaces at KLPD?
- How can the lessons learned be helpful in developing a decision support system?

A framework containing five key issues – Context, Product, Performance, Process and Players – has been developed to help to collect evidence for this case. Our final goal is the further development of this framework, so that can it be used as a roadmap in the development of innovative officing solutions.

Project background

KLPD headquarters are located in Driebergen. The project developed in the 1990s includes buildings F, M and N (total floorspace: 14,500 m²). Building N houses the majority of the workspaces (desks), building F provides support facilities and building M accommodates laboratories. This case study is concerned only with building N.

Building N (architect: Frits Toben) was completed in 1990. When the process of reorganizing the National Police Service had been completed, the programme of requirements (*programma van eisen*) for KLPD headquarters was initiated (1995). The Government Buildings Agency (GBA) and KLPD developed this project.

Project characteristics

Office innovation was intended to improve communication among the new organizational units. Furthermore, the building concept had to match the programme of requirements and the tight restrictions imposed by the municipality zoning plan (*Bestemmingsplan*).

Before the construction of the new facilities, KLPD offices were spread over 22 buildings at 18 locations in Driebergen. In 1996 – when the complex still comprised a collection of separate buildings – the expansion in Driebergen began. The new buildings F, N and M accommodate the twelve core businesses of the police. The management group is housed in two villas located in the complex.

Security determines how activities are distributed among the different buildings. Building F serves as the entrance to the other two buildings and is the most open one. It accommodates common facilities such as a restaurant, a coffee corner, a fitness room and meeting rooms. Building N, in which most workspaces are located, acts as a bridge between F and M. Building N is accessible only to employees and to visitors accompanied by an employee. Building M is heavily secured.

In the old situation, building N had cellular offices, and each room was occupied by one or two people. Rooms were assigned according to rank: the higher the function, the larger the room. In the present situation each department has been assigned a zone, in which there is a combination of open and enclosed spaces. In addition to his/her workspace, each user has his/her own pigeonhole and archive space. There is one concentration room per department and the building has a smoking room. Meeting rooms (spaces) are located in the facilities building. Administrative employees have fixed workspaces.

Decision-making process

In the conceptual phase, organizational needs and objectives, how and where people work, the area needed and other such data were collected. When that information had been collected, the design phase was commenced, exploring the possible alternatives to match space demand and supply. After the design decisions had been made the contracting and further execution phase was initiated. Once the project had been concluded, the organization moved into the new facility and the occupation phase began. At that stage it was important for KLPD and GBA to evaluate the process and the product delivered, so that the necessary adjustments could be made.

It soon became clear that an innovative workplace might be a good solution to fit both the demand and the limited amount of floorspace (m²) allowed by the zoning plan. The project team invited a private consulting firm to give a presentation about office innovation, and several innovative office projects in the Netherlands were visited. No studies on the time utilization or work patterns of individuals were executed. No assessment of the risks of implementing this concept and perspective to fit the organization's needs was conducted, nor was an assessment of potential consequences for user satisfaction/dissatisfaction carried out. Although cost reduction was not an aim in itself, the costs of an innovative concept had to be less than the costs of a traditional concept. In other words, cost reduction was not an objective but a prerequisite.

The Corps leader made the final decision on the concept chosen. With the involvement of GBA it became clear that at the time KLPD did not have clear points of departure and that the level of ambition of the project should be lowered. The project team wanted to carry out a pilot project, but the corps leaders did not want to spend time and money on one. Therefore the project team organized a 'paper' pilot project by asking a furniture system company (Gispen) to prepare sketches of different office layouts. These layouts were discussed and assessed during a workshop held in the summer of 1998. It is not clear which users took part in it or whether any positive or negative consequences were analysed during the activity.

After implementation, one of the first activities was to evaluate both the process and the product delivered. The evaluation focussed on four key points: the starting point of the project, the process of the project, the resulting product (design) and the perceptions of the various parties involved. Whereas the product may be labelled innovative, the process of development may not.

To ascertain the acceptance of the concept among the users, acceptance research focusing on the working environment was conducted during a workshop session. KLPD intends to conduct a user satisfaction survey (*Medewerkerstevredenheidonderzoek*) in mid-2003, as well as a risk inventory and evaluation (RI&E).

The project manager and the head of General Services at KLPD were the project 'champions'. Both were involved throughout the entire process. Three of the agents who contributed their knowledge to this project at the level of office layout and use were Gispen,

GBA and the architect. The promoters of the project were KLPD senior managers. The Ministry of Justice, KLPD and GBA funded it. KLPD top management and GBA had the ultimate responsibility and decision-making authority.

The introduction of the concept was welcomed with enthusiasm; however, expectations surpassed the actual results. The acceptance research revealed inconsistency in how respondents perceive their physical working environment.

After the go-ahead was given, the first decisions were taken at a higher level. Important objectives, especially those related to the building technology and budgetary implications, were achieved. But the workplace decisions at the level of layout were underestimated. The office layout issues were discussed at the level of the coordination team in a quiet operational environment. The fact that the decision makers focused on the operational aspects and did not look at the objectives and how these should be fulfilled was a mistake. Communication with users was established, but it seemed to be unidirectional. Feedback was therefore not very strong.

Conclusions and recommendations

Workplace solution

With all the changes occurring in the organization at the time, this project was one too many. It is advisable to review the match between organizational objectives, employee work processes and the working environment, not only to control how space supports the organization and its employees today, but also to explore possibilities within the scenario of a larger organization.

Although users share desks, they seem to be unaware of the opportunity to use concentration rooms. Respondents to the acceptance questionnaire do not prefer or consider using the meeting rooms in the building. It would be worthwhile to organize a discussion session with users from different departments to ascertain why this is the case and to establish the corrective actions to be taken. A special point of attention is the level of noise annoyance.

Decision-making process

At the macro level the project was well organized. It was delivered on time and to budget. Finalizing the building was the first priority. The discussion about the workplace at the level of layout was quite superfluous. Most attention was paid to technical details (installations). The involvement of users was low. Creating acceptance should be a dynamic and interactive activity. Organizing workshops in order to listen to and to talk with users is fundamental. Attention was too focussed on building characteristics and technology. The link to people, work and organizational needs appeared to be underestimated.

The decision to innovate was taken while preparations for the programme of requirements (1996) were still in progress. By the time the layout was to be realized (1998) no further research on time utilization, needs, etc. had been done. It is not clear how useful the programme of requirements was in the development of the office concept or why it was neglected when designing the workplace. No criteria were defined to assess the project developed at the level of the office layout.

Although work processes were studied, the translation into design solutions was poor, causing users to complain that they were not listened to. In 1998, GBA-AIP helped for only a very brief time and the opportunity to take corrective actions was missed.

The acceptance research revealed some points of conflict. One of the misfits between the work process and the physical environment is the lack of visual and auditory privacy.

Those providing the economic means supported the idea of office innovation. The project manager and the head of General Services at KLPD were fully engaged in delivering the project on time and to budget. The role of the users was passive. They provided the data for the programme of requirements and were informed throughout the process, but

communication was unidirectional. Their knowledge of the work performed was not used maximally. There was little interaction and feedback. Risk assessment during the process and after implementing the innovative concept was not evident.

Towards the future

KLPD

Investigating workplace satisfaction does not seem to have a high priority at the moment. But if problems exist, it is important realize that these negatively affect day-to-day work, probably reduce employee productivity and – even worse – damage employee health. A discussion on the topic could establish how the workplace is performing and, if necessary, what should be done to improve it.

GBA

Tool development

Understanding the product is relevant to understanding the process, and vice versa. Gathering information about the project characteristics is important to understand the process. Understanding the aims of the project, the needs of the organization and the way people work is necessary in order to match demand and supply. A method to ensure that these issues are taken into account must be established. It is important to have a clear understanding right from the beginning whether office innovation is a means to achieve something or merely an end in itself. In either case, if a project involves changes and innovation, project leaders should make every effort both to obtain a clear understanding of the actual needs and to fulfil them.

The success or failure of a project has an impact on the productivity and health of the staff. It is therefore necessary to focus not only on reducing facility costs but also on other, non-monetary costs.

A workplace and its context comprehend various issues, such as the site, structure, shell, services and scenery. Relating these different levels to the decision-making process and strategy will facilitate the research and provide some improvements in decision-making. Discussions in different decision-making groups can be focussed on the topics relevant to each layer.

Key issues are to find a good balance between the information needed and the effort required to involve users in identifying the needs and to create acceptance without reducing the speed or the quality of the project.

1 Introduction

1.1 Problem statement

Workplace innovation is being carried out around the globe. New ways of working are being implemented in order to increase productivity, reduce accommodation costs and increase labour satisfaction. However, implementing, using and managing innovative office concepts presents both space users and space providers with great challenges. Decision makers often have difficulties understanding the product to be developed and steering the process. At times they opt for 'innovative' solutions without knowing whether these solutions will support organizational objectives and employee needs. Users and providers often encounter change resistance and have to deal with uncertainty and risk.

Despite the knowledge gained and the evaluation models developed so far, we are still faced with a lack of systematically recorded and reliable data. Organizations require process architecture (data and tools) that helps to deliver solutions that truly meet their demands and objectives as well as those of other stakeholders. Performance measurement and clear information about costs and benefits, based on empirical evidence, are necessary in order to facilitate decision-making during and after the development process of innovative projects. The result is timely, well-informed, sound decisions and improvement of the use and management of the space.

Key issues in delivering workplace solutions are: (1) Gaining a clear understanding of change management, resistance and risks, and how to deal with them. (2) Determining in early phases whether the benefits offset the costs, with reference to facility costs, organizational performance and employee wellbeing.

In the development of process architecture, case studies are used to collect evidence. This case study focuses on the Korps Landelijke Politiediensten (KLPD) – Driebergen project. KLPD has implemented an innovative workplace concept to fit the new demands of the organization while complying with the regulations laid down in the Driebergen zoning plan (*Bestemmingsplan*).

The research questions of this case study are:

- How was the decision-making process undertaken during the development of innovative workplaces at KLPD?
- Which tools were used to support decision-making at each phase of the process?
- How can the lessons learned be helpful in developing a decision support system?

1.2 Objective of the study

This case study has two objectives:

- To gain an insight into the decision-making process concerning the development of innovative workplaces, with a focus on the conceptual and occupation phase, the stakeholders involved, their interests, decision criteria, and the tools needed and used to support decision-making.
- To use the information in the development of a decision support tool for the W4 – Innovative office learning partnership.

1.3 Study framework

The framework depicted in Figure 1 outlines the key issues in the development process of innovative workplaces. The framework is divided into five sections: Context, Product, Performance, Process and Players.

Context pertains to the technical, social, economic, environmental, cultural and political trends that affect the real estate market and the organization itself (i.e. demographics, global economic situation, knowledge workers, etc).

Product is the working environment delivered. Such should provide an optimal fit with the organization and its employees and work processes. The product includes the accommodation (building, workspaces), ICT and other facilities, as well as the relation between the supply and demand of office space in the market.

Process is the course of action undergone during the development or redevelopment of the product. Process comprises four phases: concept, design, action and occupation.

Players are all the stakeholders and their roles; including interests, assumptions and other important characteristics, such as knowledge and skills.

Performance, at the centre of the diagram, refers to the performance of both the product and the process. It also refers to the criteria and tools used. Performance criteria are either quantitative or qualitative. Risk is a relevant criterion when dealing with uncertainty brought about by change and innovation. Risk control techniques are separated in this diagram to highlight their importance.

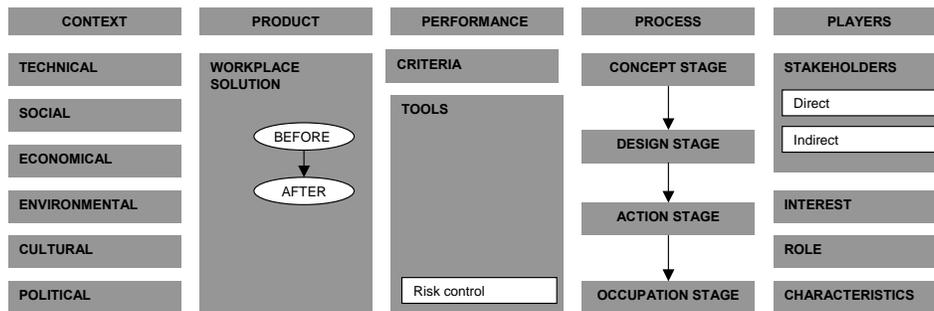


Figure 1 – Development process of innovative workplaces.

1.3.1 Set-up

Figure 2 shows which topics are included and how the study is organized. Not all issues from the framework are dealt with in this study.

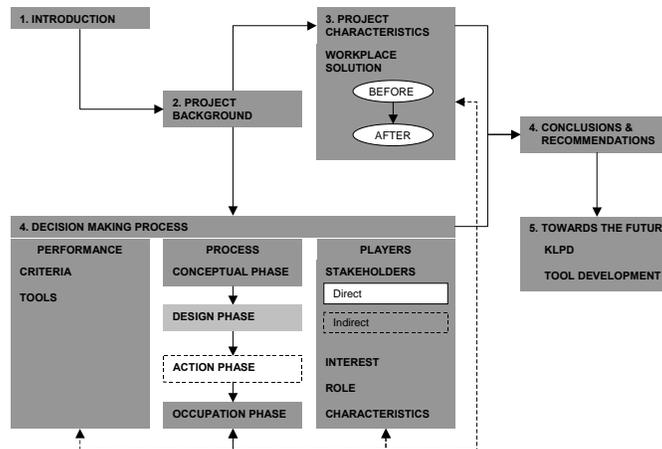


Figure 2 – Structure of the study

1.3.2 Structure of this report

Section 2 presents an introduction to the context of the organization before the initiation of the process as well as a general introduction to KLPD (the customer) and GBA (the space provider).

Section 3 presents facts about both the old and the present situation. The first part is a brief introduction to the organization and some key facts about the project. The second part discusses the differences between the past and present working environment. The third part presents the most important results of the acceptance research conducted in January 2001.

Section 4 describes the decision-making process, based on four phases and its corresponding steps. At each phase the various activities conducted and the various tools used are dealt with. This is followed by a description of the different players involved in the project as well as of their role and interests. Finally the decision-making itself is dealt with.

Section 5 presents conclusions and recommendations about the solution developed and the process undertaken.

Section 6 presents further recommendations concerning the future and the development of a decision support tool.

2 Project Background

2.1 Framework of the project

In 1990, a reorganization of the National Police Service was launched under the leadership of Mr Korthals Altes. Five years later, the organization had been reduced from 148 state and municipality entities to 25 regional departments and the Korps Landelijke Politiediensten (KLPD; National Police Department).

In 1990, building N (architect: Frits Toben) in the Driebergen complex was completed. At the time, it was clear that the complex was going to be further developed. After the reorganization of the National Police Service had been completed, the programme of requirements (*programma van eisen*) for KLPD headquarters was initiated (1995).

2.2 GBA as the space provider

The Government Buildings Agency or GBA (Rijksgebouwendienst – Rgd) is one of the four Directorates-General of the Ministry of Housing, Spatial Planning and the Environment (VROM). The Minister of VROM is ultimately responsible for the performance of GBA. GBA has over 850 employees. One of the remits of the Ministry of VROM is to perform actions which will contribute to a more sustainable environment. GBA is responsible for giving shape to the Ministry's policy in the way it provides working space for civil servants.

GBA contributes to the policy of the Ministry of VROM in such fields as:

- Urban development – promoting the vitality of urban areas
- The preservation of monuments and historic buildings – preserving the national cultural heritage
- Architecture – promoting contemporary and sustainable architecture
- Art – incorporating works of art in government buildings
- Energy conservation – reducing energy consumption
- Sustainable building – reducing the negative effects buildings have on the environment

The role of GBA

GBA is in charge of the national government's accommodation and related services. All government departments make use of its services, and are obliged to buy or let accommodation from it. They may, however, seek the advice of third parties. GBA is also allowed to work, on certain conditions, for third-party contractors, such as independent administrative bodies. However, commissioning of this kind occurs on only a modest scale. Embassies (Ministry of Foreign Affairs) and buildings used for military purposes (Ministry of Defence) fall outside the scope of GBA. The ratio of internal to external clients is 19:1.

Property portfolio

GBA's property portfolio comprises office buildings and buildings with a particular purpose. The total area of its office buildings accounts for 53% of its total building stock. Examples of buildings for specific purposes are penal institutions, museums and laboratories. GBA also has property not intended for accommodation purposes, such as property that has cultural and/or historical value (e.g. the mausoleum of Willem van Oranje in Delft).

GBA owns about 75% of its buildings and rents the remainder. The rented buildings are mostly offices, and the buildings used for a particular purpose are mostly owned. The total value of the portfolio is approximate USD 3.5 billion (EUR 3.675 billion) net book value.

GBA products

The functions of/range of services provided by GBA comprise:

- Asset management
- Procurement
- Real estate management

- Maintenance
- Facility services (on demand)
- Portfolio management
- Project supervision
- Design and construction
- Remodelling
- Providing occupants with consultation services

The occupants themselves take care of moves, interiors, security, facility services, ICT and HRM.

GBA provides clients with a complete and integrated service package. All the services are directly related to accommodation. Large clients do not buy these services from GBA; they have professional business units that deal with the remaining services, usually by means of outsourcing. A limited number of clients – mostly the small ones – are interested in a more extensive service package, the additional services of which consist mainly of facility services.

2.3 KLPD as the customer

KLPD together with 25 regional brigades comprise the Dutch Police Service. KLPD acts nationwide, executing autonomous, supportive and coordination activities. It also promotes collaboration between the population and the services provided by the Police Service.

KLPD’s main activities

- Combating serious and/or organized crime
- Ensuring mobility and security
- Enforcing environmental legislation
- Maintaining public order
- Contingency planing
- Protecting persons
- Providing logistic services
- Introducing innovative and information technology

Organizational structure

KLPD has twelve executive departments to carry out its primary processes (e.g. policing traffic and performing criminal investigations) and four shared administration services. Over 3500 people work at KLPD. The corps leaders act as the KLPD council. They, together with the head of each department, comprise the Corps management team.

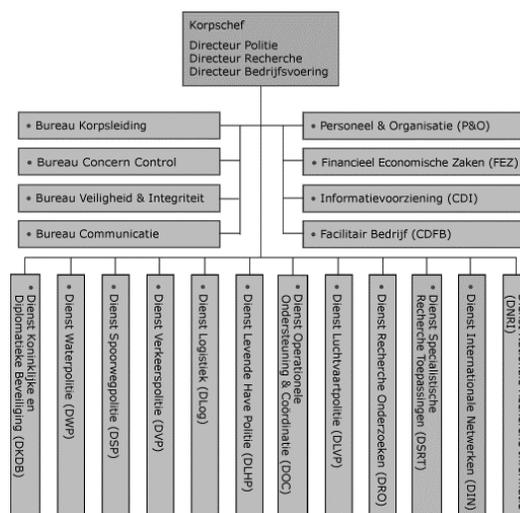


Figure 3 – KLPD organizational structure

KLPD cooperates with other regional brigades as well as with the public prosecutor. The KLPD council plays an important role in the strategic policy-making between regional corps and KLPD. Besides its advisory activities, the council is engaged in leading and managing KLPD. The national office of the public prosecutor in Rotterdam is responsible for the judicial authority performance within KLPD: the national office of the public prosecutor guides KLPD in tracing penal facts.

Facility Service Department

The Facility Service Department (*Concerndienst Facilitair Bedrijf* - CDFB) is a new KLPD area. In the old situation, many persons spread around the company took care of the various facility activities. Now the CDFB takes care of them, allowing each department to concentrate on its primary processes.

CDFB takes care of the use, maintenance and protection of all KLPD buildings, the arrangement (layout) of the workplace and the purchase of capital equipment (fixed assets), such as vehicles and boats. CDFB is also responsible for its management and the technical infrastructure. It also deals with, for example, the recording and settlement of damages, the internal printing facilities, the distribution of mail and the management of archives.

3 Project characteristics

KLPD headquarters are located in Driebergen. The project developed in the 1990s includes buildings F, M and N (total floorspace: 14,500 m²). Building N houses the majority of workspaces (desks), building F provides support facilities and building M accommodates laboratories. This case study is concerned only with building N.

Office innovation was considered in this project in order to improve communication among the new organizational units. Furthermore, the building concept had to match the programme of requirements as well as the tight restrictions imposed by the municipality zoning plan (*Bestemmingsplan*).

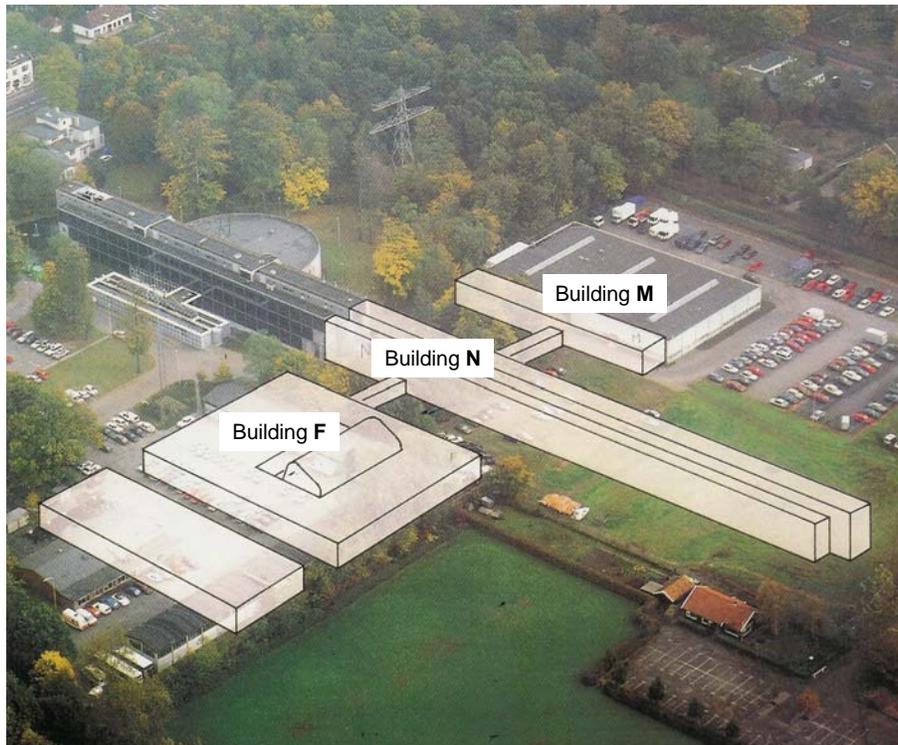


Figure 4 – KLPD complex in Driebergen

Key facts

Location	Driebergen-Rijsenburg, the Netherlands
Starting date	~1990
Completion date	May 1999
Employees	945
Workspaces	700
Total area	12,500 m ² new, 2,000 m ² renovation
Total cost	EUR 21.3 million

3.1 The workplace before and after

The Driebergen complex comprises several buildings of different styles and character. Before the construction of the new facilities, the KLPD offices were spread over 22 buildings at 18 locations in Driebergen. In 1996 – when the complex still comprised a collection of separate

buildings – the expansion in Driebergen began. The new buildings F, N and M accommodate the twelve core businesses of the police. The management group is housed in two villas located in the complex. Figure 4 shows the complex before the expansion.

Security determines how activities are distributed among the various buildings. Building F serves as the entrance to the other two buildings and is the most open one. It accommodates common facilities such as a restaurant, a coffee corner, a fitness room and meeting rooms. Building N, which accommodates most of the workspaces, acts as a bridge between F and M. Building N is accessible only to employees and to visitors accompanied by an employee. Building M is heavily secured.

3.1.1 Organizational characteristics

Finding facts about the characteristics of the organization in the past was difficult due to the lack of relevant records. As not much information is available about earlier changes within the organization, little can be said about them. KLPD was a new organization with centralized facilities created from a number of police units.

Organizational structure

Structure deals with hierarchy and centralization/decentralization. Generally, armed forces organizations are characterized by hierarchical structures with top-down authority. Decision-making is likely to be centralized.

Environment

Although the public order environment in the Netherlands is stable, it is expected to deteriorate in the future. Today, Dutch citizens are demanding '*meer blauw op straat*¹'. Further growth is expected (e.g. the establishment of an anti-terrorist team comprised of 100 persons).

Contrary to private companies, organizations in the public sector are exposed to less market pressure. However, public sector organizations too are aiming to attract and retain a young workforce.

Work processes

The different police organizations embodied in KLPD have different areas of expertise and work processes are not of the same nature. Some are linear while others are more complex (for example, criminal investigation teams work on a more ad hoc basis). The organization may have a directive authority, although more participative approach may prevail in certain divisions.

Corporate culture

KLPD has a formal culture. During the interviews it was mentioned that the corps leaders work in two villas in the complex, and often office size is related to hierarchy within the organization.

3.1.2 Work processes

Work processes are the tasks the workers have to perform and the tools they use.

Task

Tasks are the activities performed by each individual: what they do, and how and where they do it. The analysis of work processes includes task analysis (both current and desired), type of work conducted (solo/group), communication patterns and environmental satisfaction.

¹ 'Meer blauw op straat' literally means 'More blue in the streets', where 'blue' refers to police officers.

Task analysis should be conducted at an early stage in the process. Its results are crucial to the development of an office concept that truly fits organizational objectives and employee needs.

In the present situation, many employees do not work regular hours (i.e. 9 to 5). The department system is two days on, two days off. Some employees have more routine work with not many changes, while others (e.g. researchers) have less routine and may face high levels of change as investigations develop. No detailed information on routine versus non-routine work and levels of autonomy were found.

Managers are housed in a different building, which facilitates communication among them but may make communication with their subordinates less efficient. Details regarding this issue in the past situation are not available.

Tools

Workers need tools to process and store the information produced. These tools are ICT (hardware, software, network infrastructure and services) and filing systems (physical/electronic, centralized/decentralized).

Data about hard- and software were not given in the information provided. However, during one of the interviews it was mentioned that a lot of attention was paid to technical issues. Currently, overload is a problem. Looking at the questionnaire used in the acceptance research, we can deduce that a significant upgrade has been implemented in this area. For security reasons, the intranet is completely isolated from the outside world, which is why only stand-alone computers are available.

Each desk has a file pedestal. A number of storage cabinets are located in the office spaces and/or along the hallways. A lot of attention is paid to the confidentiality of documents. No information was available about digital filing, although the acceptance research indicates that users are satisfied with the quantity of such.



Figure 5 – Filing

3.1.3 Physical environment

For facility management the benefits of the new concept are more workspaces, more flexibility (less alteration/renovation when there are changes in the number of personnel/workforce) and

better communication. However, there are hardly any baseline numbers available – except for those of the acceptance research, which revealed some points of conflict.

Place

Place refers to the physical location of workspaces in relation to other workspaces. There are two options: central office (which houses the workspaces of employees from the same unit or department) and telework office (a workspace physically disconnected from the central office)².

In this case study the focus is on a single office building: building N at KLPD headquarters. The building fulfils the traditional function of providing a place to work, meet colleagues and receive visitors. For security reasons, teleworking is not a viable option.

Layout

Layout pertains to the physical enclosure of a workspace. There are four options: cellular offices (enclosed spaces for 1-3 workspaces), group offices (enclosed spaces for 4-12 workspaces), open-plan offices (enclosed spaces for 13 or more workspaces) and combi-offices (enclosed spaces for single workspaces situated around an open space, which is designed to accommodate common facilities and group work³).

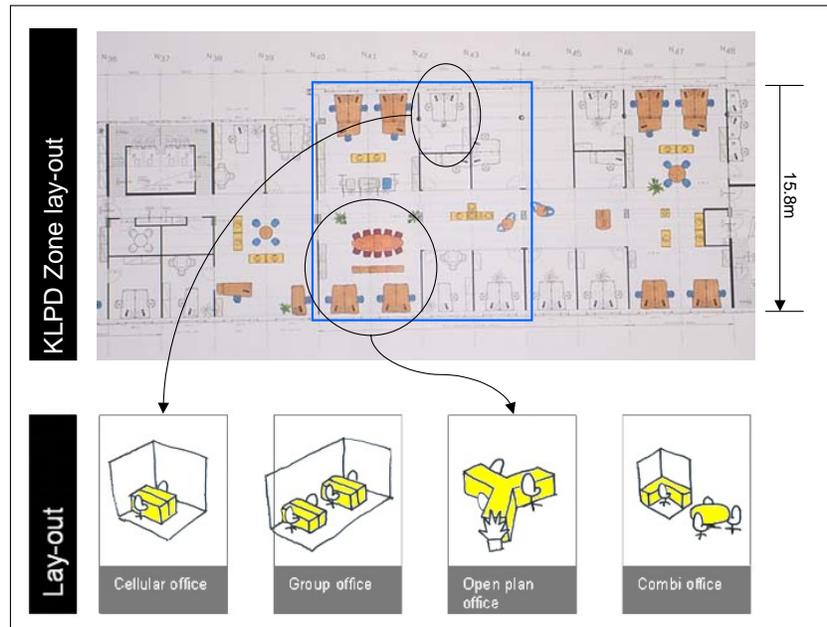


Figure 6 – Workplace layout

In the old situation building N had cellular offices, in which the rooms were occupied by one or two persons. Rooms were assigned according to rank: the higher the function, the larger the room. In the present situation each department has been assigned a zone in which there is a combination of open and enclosed spaces (Figure 6). In addition to his/her workspace, each user has his/her own pigeonhole and archive space. There is one concentration room per department and the building has a smoking room. Meeting rooms (spaces) are located in the facilities building. Administrative employees have fixed workspaces. Larger rooms are

² Vos, P. G. J. C., J. J. van Meel, et al. (1999). *The office, the whole office and nothing but the office: a framework of workplace concepts, version 1.2*. Delft, Delft University of Technology Department of Real Estate and Project Management.

³ See footnote 2.

assigned to higher functions, however, and low occupancy persists. The security system determines zoning within the building.

Users prefer to have their own workspace (territoriality). They want to have more walls to provide them with privacy and to obviate the need to greet people all the time.

Use

Use refers to the assignment of workspaces, that is, which office workspace is allocated to whom. This is only relevant if the workspace is located in an office building. There are three essentially different options: personal offices (1:1; workspaces used exclusively by a single employee), shared offices (1:X; workspaces assigned to two or more employees, who use them on a rotating basis) and non-territorial offices (X:X; a number of workspaces assigned to two or more employees)⁴.

The new office concept developed for building N pertains to sections shared by 40-50 people, of whom 8-12 are present at any one time (use of workspaces is 1:5). During operational police work, there are roughly four persons per workspace (many people work out of the office). The ratio in other departments is approximately 1:1.

3.2 Workplace performance

3.2.1 Health

Sick leave is higher, but this does not seem to be a result of the office concept. According to the labour conditions law (ARBO), the amount of floorspace (m²) per person in the building is inadequate.

3.2.2 Costs

At an early stage of the project, the total building cost rose from EUR 8.6 million to EUR 29.5 million, partly because of extra floorspace, higher quality, incorrect estimates of costs (laboratory costs were estimated on the same basis as office costs, but laboratories are far more expensive), and extra security measures (EUR 3.4 million). By the time the programme of requirements was completed, the problem had been detected and actions were taken to obtain the additional funds.

Although reducing accommodation costs was not a goal of this project, the project management group worked with the intention to build as cheaply as possible, also taking into account the IFD (industrial, flexible, efficient) principle. Because this research is focused on the decision process, information about how much was actually spent on the office was not collected. Nor was information collected on how much was spent on running costs before and after the implementation of the new concept. However, certain facts became apparent during the interviews.

At the macro level, the project plan was realized within the budget. KLPD is satisfied with the cost:quality ratio. They consider that the cost objectives were achieved.

As leaders are accommodated in the villas, it is expensive to make alterations. The extra money needed to make the new concept attractive was not available. Corps leaders did not support the purchase of new furniture, so most of the old furniture was kept. Only a small budget was allocated.

3.2.3 Satisfaction

After the implementation of the project, GBA used a questionnaire to conduct acceptance research among 36 employees. The questionnaire was divided into six parts: work process, internal communication, external communication, accessibility, quality of the working environment and overall perception of the working environment.

⁴ See footnote 2.

The sample comprised 37 persons, 7 of whom were female (19%). All had labour contracts for either 35 or 36 hours. 73% of the respondents were older than 41. The information was collected during a roundtable discussion with all respondents. Not all interview questions were answered completely, and some were answered inconsistently. Because of this, the numeric total may not be 37 responses. The results of this research are discussed in the following subsections.

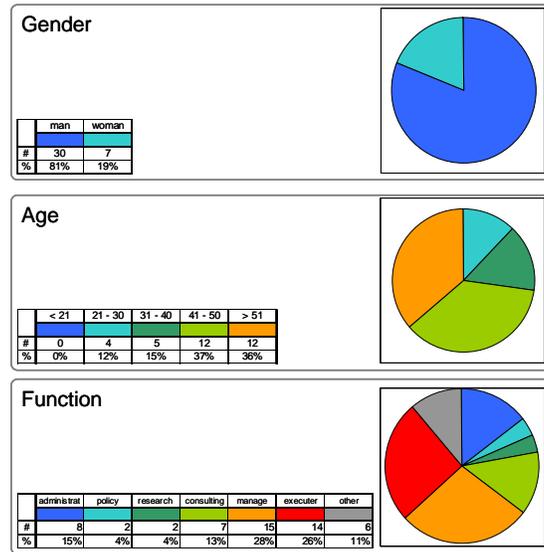


Figure 7 – Background of the questionnaire respondents

3.2.3.1 Work process

While half of the respondents have a shared workspace (19/35), only a few (4/35) feel that they are free to choose *where* they work. They do however feel free or reasonably free to choose *how* and *when* to work.

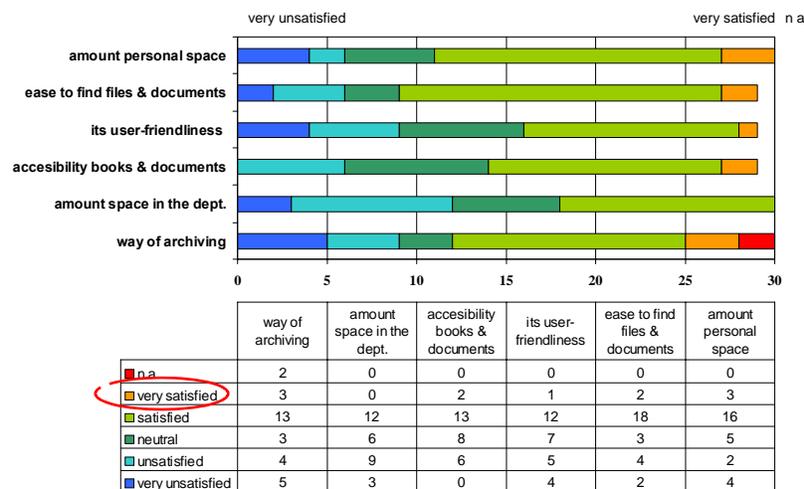


Figure 8 – Workplace and work process

The majority of the users (29/34) said that they clean their desk before leaving work. They indicated that they are mostly satisfied regarding their archives (i.e. amount of personal

space, ease of finding files and documents). However, the facility management complains that concentration rooms are used as storage rooms and as somewhere to store archives.

Just less than half of the employees (16/35) stated that the productivity in their working environment is positive. Opinions about how the working environment influences their productivity are divided: 15/35 said that the influence is negative, while 12/35 regard it as positive.

3.2.3.2 Internal communication

Respondents communicate mostly with administrative colleagues (25/31), executive colleagues (29/33) and managers (28/33). Communication takes place predominantly one-to-one (33/33), followed by e-mail (28/33) and phone (28/33).

Normally people meet at their own workspace (13/33) or that of their colleagues (21/33). Gathering in the meeting rooms of the building occurs infrequently (1/32). In general, users believe that their working environment stimulates contact with colleagues (22/32).

Question: Where do you usually communicate with your colleagues?



Figure 9 – Internal communication

3.2.3.3 External communication

External communication is predominantly carried out by telephone (15/31), and often the meeting takes place at the employee's own workspace (13/29). Using the meeting rooms is seldom considered (2/29). Respondents have conflicting views about the space that is available for meeting external contacts.

For informal meetings, 12/29 think that the space is sufficient while 9/29 disagree. For formal meetings, 13/29 think that the space is very limited while 12/29 disagree. Most (20/29) think that their working environment does not stimulate contact with external contacts. In regard to communication in general, the majority of the respondents do not prefer or consider using the meeting rooms in the building.

Question: Does your working environment stimulate contact with external contacts?



Figure 10 – External communication

3.2.3.4 Accessibility

Most respondents (24/34) consider it is easy or very easy to contact their colleagues in their working environment. They are equally accessible physically and by phone (23/33). In general, external contacts can contact employees easily, especially by phone (17/32).

3.2.3.5 Quality of the working environment

Just over half of the respondents (19/35) have a shared workspace, while 8/35 have their own office and 7/35 occupy a room for 2. Occasionally, the desk of half of the respondents (17/34) is used by other people when they are absent. Opinions about how positively or negatively the office layout fits their daily activities are divided 50/50. Most users (22/34) stated that the furniture suits their activities very well.

Question: Does your working environment stimulate contact with external contacts?

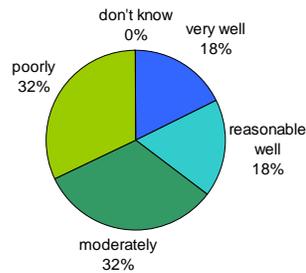


Figure 11 – Quality of working environment

Respondents are highly satisfied with the services, that is, with reception (29/34), copying facilities (26/34) and telephone (24/36). The most used facilities are PCs (30/33) and mobile telephones (24/32).

3.2.3.6 Perception of the working environment

Respondents are satisfied with the internal climate in the office (e.g. natural light, view). There is no unanimous perception regarding privacy; however, the perception tends towards dissatisfaction.

Satisfaction regarding work situation and functionality is divided 50/50 between positive and negative. Users are however satisfied with the image, comfort and size of the workplace.

Question: Please rate your satisfaction with the following aspects of your working environment

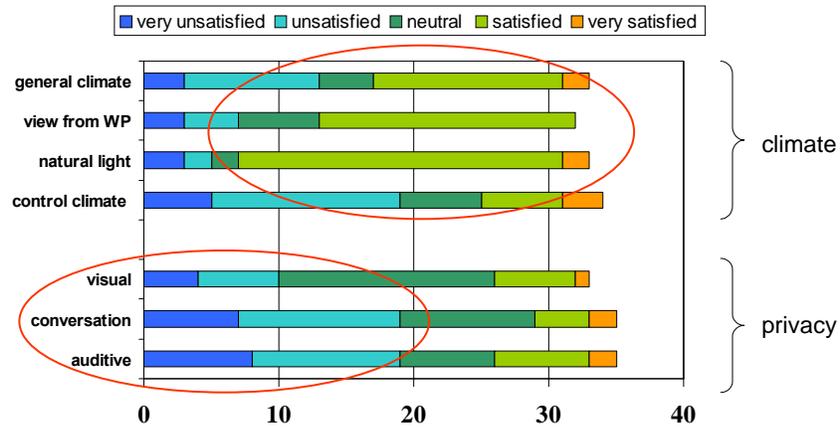


Figure 12 – Perception of the working environment

4 Decision-making Process

This section deals with the process, the actors and the actual decision-making.

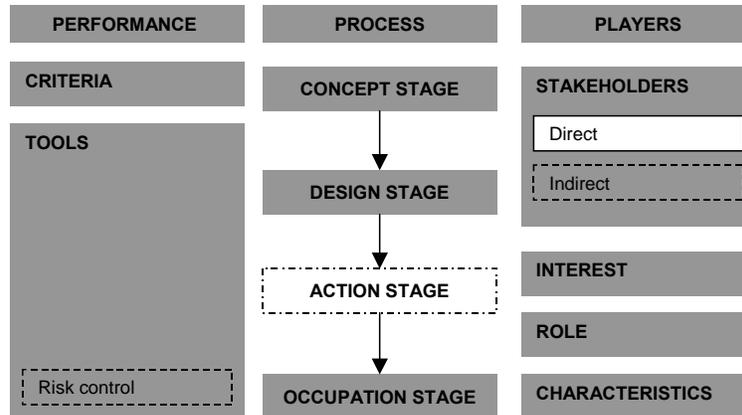


Figure 13 – Decision-making process

4.1 Process

Because the purpose of the conceptual phase was to establish the demand, data on organizational needs and objectives, how and where people work, the area needed and other such details were collected. When that information had been collected, the design phase was commenced, exploring the possible alternatives to match space demand and supply. After the design decisions had been made, the contracting and further execution phase was initiated. Once the project had been concluded, the organization moved into the new facility and the occupation phase began. At that stage it was important for KLPD and GBA to evaluate the process and the product delivered, so that any necessary adjustments could be made. In the normal course of actions, space managers will continue assessing whether the space still fits the organizational demands (Figure 13)

The following graph briefly describes the course of events in this project.

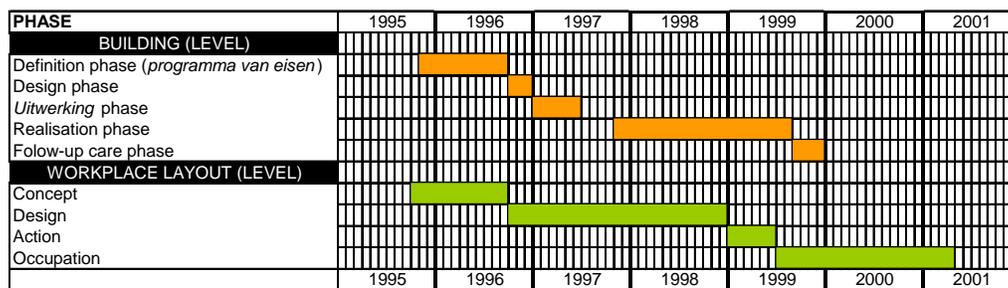


Figure 14 – Project timeline

4.1.1 Concept phase

The project at Driebergen was commenced in mid-1995 – with some difficulty due to the administrative activities between GBA and KLPD, the tight budget GBA had been given for the project in the early 1990s, and the limitations of the municipality zoning plan (*Bestemmingsplan*).

After approaching and being turned down by two project managers in mid-1996, a project manager commenced an intensive process in order to acquire the additional funds to construct the building. The extra funds were provided partly by GBA and partly by the Ministry of Justice.

Because the municipality zoning plan would not allow the construction of a tall building, a long, wide building four storeys high would have to be realized. Constructing a building 16 metres wide would provide the floorspace required (in the Netherlands, buildings are normally 10-12 metres wide).

It soon became clear that a wider building would influence other matters; for example, the design of the workplace layout could not be cellular offices because this would not comply with Dutch labour regulations. While cellular offices for one or two users is the most traditional approach to office layout in the Netherlands, Dutch law stipulates that an employee's desk may not be located more than 5 metres away from natural light and access to a window. In a building 16 metres wide, a more innovative concept would have to be applied.

While preparing the programme of requirements, the various departments were assessed and information about their needs was obtained. With the idea of an innovative workplace concept in mind, the project team invited a private consulting firm to give a presentation about office innovation. Also, several innovative office projects in the Netherlands were visited.

4.1.1.1 Activities conducted / tools used

Programme of requirements

In September 1996, GBA delivered the report on the programme of requirements. The analysis of the organization was conducted as a point of departure. This focused on five points: 1) the place of the organization in society, 2) the structure of the organization, 3) an inventory of processes, 4) the effectiveness of the existing organizational processes and the possibility to improve them, and 5) the number of employees and their functions.

The programme determined the area assigned to each department ($8\text{m}^2 \times \# \text{FTE} = \text{area}$). Internal distribution would be the responsibility of each department. The new solution would allow expansion of the workforce within the limited space.

No studies on the time utilization or the work patterns of individuals were executed. A further assessment of the risks of implementing this concept and perspective to fit the organization was not conducted. Information about arguments such as cost reduction and dissatisfaction consequences at this phase was not found.

Presentation on optimal office exploitation

On 23 September 1997, Century Consult (a private consulting company) made a presentation about how KLPD could optimally exploit its new headquarters. The company explained the differences between traditional offices, innovative offices and integral office innovation, stressing the importance of studying the current work processes, identifying changes in demand, designing the new primary and secondary processes, and using information technology.

Century Consult portrayed the development of the new facility as an opportunity to adapt primary and secondary processes to current demands, and to fit them within the physical space. The involvement of end users (employees) was highlighted as a crucial activity to create acceptance.

The company also explained that the expected results would benefit the organization as well as its employees and clients. (1) The employees would have a clear insight into their primary and secondary processes, think about new ways of doing things, improve quality by means of more aligned and smarter processes, and may perform more tasks in less time. (2) The organization would better understand its primary and secondary processes, streamline them,

improve efficiency, reduce costs and reach more consumers. (3) Clients would benefit from faster reaction time and better service.

Century Consult suggested a six-step plan:

- Perform interviews to identify primary and secondary processes and bottlenecks.
- Start the project: choose the process(es) and the project organization.
- Define the main process: activities, information stream and capacity.
- Analyse process: time analysis (work time, waiting time, duration), information analysis and capacity analysis.
- Design the alternatives.
- Decide on and realize the best solution.

Some of the conditions to succeed put forward by the consultants were: management support, having a problem owner and champion; enough capacity; time; clear decision-making; carry out a pilot; choose a workgroup leader who is well-informed about the business process.

No information on the follow-up to this presentation was found, nor was evidence that the steps suggested were actually followed.

Visits to other innovative projects

Knowing that a traditional office concept was not feasible, different innovative officing options were considered. It was necessary to obtain information about the innovative concept, which would entail visiting various projects.

GBA organized for some organization representatives a visit to several innovative office projects in the Netherlands: Interpolis, Schiphol, Dynamisch Kantoor Haarlem, Maastricht (project from Veldhoen + Company), Politie Zuid Limburg, Tolsteeg (Criminal Investigation Corps Utrecht) and Bruggebouw Den Haag (Utrechtse baan).

After the visits, the representatives were not very enthusiastic about the concept. They found that, for example, Dynamisch Kantoor Haarlem was too busy and that depriving users of their own workspace was going too far.

User involvement

Users were only involved early in the phase, to help GBA prepare the programme of requirements.

4.1.2 Design phase

The objective of the design phase was to translate the knowledge gained in the previous phase into a concept design. Although the concept of office innovation is very broad and includes many elements that can be combined in different ways, it should always comply with the requirements.

A Europe-wide invitation to tender for the construction of the building and the supply of furniture was issued. It was difficult to determine whether the needs established in the programme of requirements were double-checked before defining the strategic brief. The Corps leader made the final decision on the concept chosen.

4.1.2.1 Activities conducted / tools used

GBA–AIP support

During the design phase, the Adviesgroep Innovative Projecten (GBA-AIP) was brought in to assist. On 31 March 1998, a advisor (Mr Teunissen) had a preliminary talk in relation to office innovation. He held interviews with various people at different levels of the organization. GBA-AIP's research focused on three questions: were they seeking (1) efficiency, (2) effective support for new processes, or (3) a catalyst for change?

Lack of space was not mentioned as an issue at that stage. However it was clear that KLPD was a new organization in which strong changes were occurring, that is, departments with different cultures and opinions were being incorporated. The general feeling was that people were very tired of changes after the earlier reorganization of the Dutch police.

At the time, KLPD did not have a strong point of departure and it was thought that the aims of the project were too high. The recommendations were presented at a coordination team meeting and the final report was delivered in July 1998. Mr Teunissen pointed out that although the AIP had no capacity to lead the project, he would be willing to play an advisory role.

Although GBA-AIP support was desired (as recorded in the minutes of the coordination team meeting), it was not further involved in the project.

Pilot project

The project team wanted to carry out a pilot project, but the corps leaders did not. Instead, the project team organized a 'paper' pilot, for which Gispen (a furniture system company) provided furniture and prepared some sketches. The different layouts were tried and assessed during a workshop in the summer of 1998. It is not clear whether users took part or whether any positive or negative consequences were analysed during this activity.

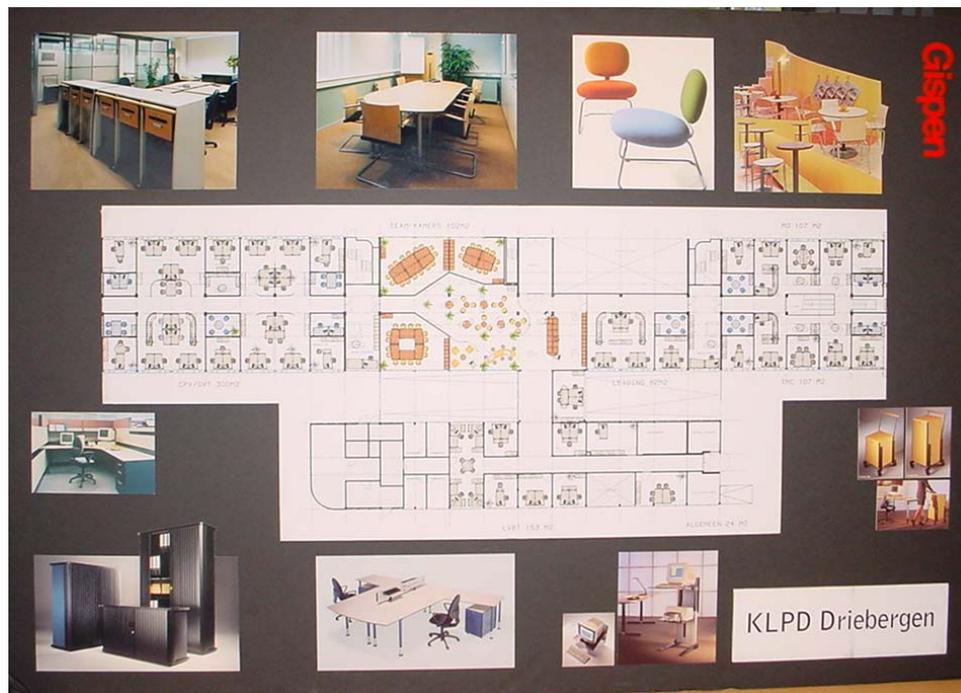


Figure 15 – Presentation prepared by Gispen

User involvement

Users were involved in this phase of the project by different communication means: information centres with photos, 3D photos, plans, art impressions, presentations by the heads of various departments; information box; a video showing the Corps leader entering the new building; a newsletter (Bouwinformatief). None of the information means was interactive.

4.1.3 Action phase

During the action phase, the plans were realized. Contacts were signed and products and services delivered. The information found about this phase mainly concerns construction and building technology details. Data on the activities conducted during this phase were not collected.

4.1.4 Occupation phase

One of the first activities conducted during the occupation phase was an evaluation of the process and the product delivered. The objective of this was to compare the outcomes with the objectives in order to carry out any necessary corrective action.

4.1.4.1 Activities conducted / tools used

Project evaluation

On 18 January 2001, GBA conducted three interviews with three people from KLPD and seven people from GBA involved in the project.

The evaluation concerned four key issues: (1) the starting point of the project, (2) the process of the project, (3) the resulting project and the internal working processes, and (4) an assessment of the various parties involved. In this, the focus was on assessing the process supporting the development of the project. While the product developed could be labelled innovative, the development process could not be.

Acceptance research

To ascertain the acceptance of the concept among the users, acceptance research was conducted during a workshop session. The results of this research are presented in 3.2.3 'Satisfaction' (p.12). This section deals with the tool itself. It was a very effective way of collecting information, because during the session all the questions were answered. One of the disadvantages is that it may have been difficult for the respondents to answer independently.

User satisfaction survey (Medewerkerstevredenheidonderzoek)

This survey will focus on general labour conditions, although it will provide information about how employees feel about their employer and their working conditions. KLPD intends to conduct this research in mid-2003.

Risk inventory and evaluation (RI&E)

This research is mandatory according to Dutch labour regulations. An RI&E also provides more information about the workplace. RI&E is an independent tool to measure risk in the actual situation, and is related to labour regulations. KLPD expects to make use of this tool in the near future.

4.2 Players

There are both direct and indirect players in the development process of office innovation. According to their interest/objectives they will apply their knowledge and skills to their individual role.

The direct players are (1) the users (employees of the organization and other parties making use of the facilities), (2) the space providers (those in charge of providing the accommodation facilities), (3) the fund providers, (4) the consultants (ranging from management consultants to architects and workplace specialists) and (5) the statutory authorities (who are mostly 'present' in the form of labour and construction regulations). See Figure 16

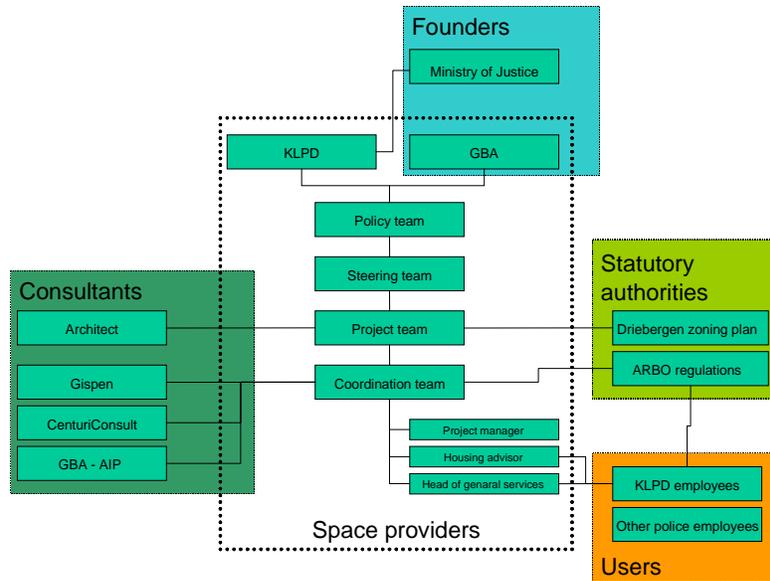


Figure 16 – Players

Indirect players include the organization’s customers, its board of directors, its stakeholders and the families of its employees. Depending of the kind of organization and work developed by the employees, their level of involvement is more or less relevant.

Figure 17 shows how the project was organized internally and externally. The development of the innovative workplace concept was managed during the coordination team meetings and was therefore given a low profile. The meetings dealt mainly with operational issues. Only four people were involved on a regular basis: Mr W. Schoeman (project manager from GBA); Mr R. Verberne (housing advisor appointed by KLPD), Mr M. Demeijer (head of General Services GBA), and Mr J. ter Schure (coordinator KLPD) (see Figure 16).

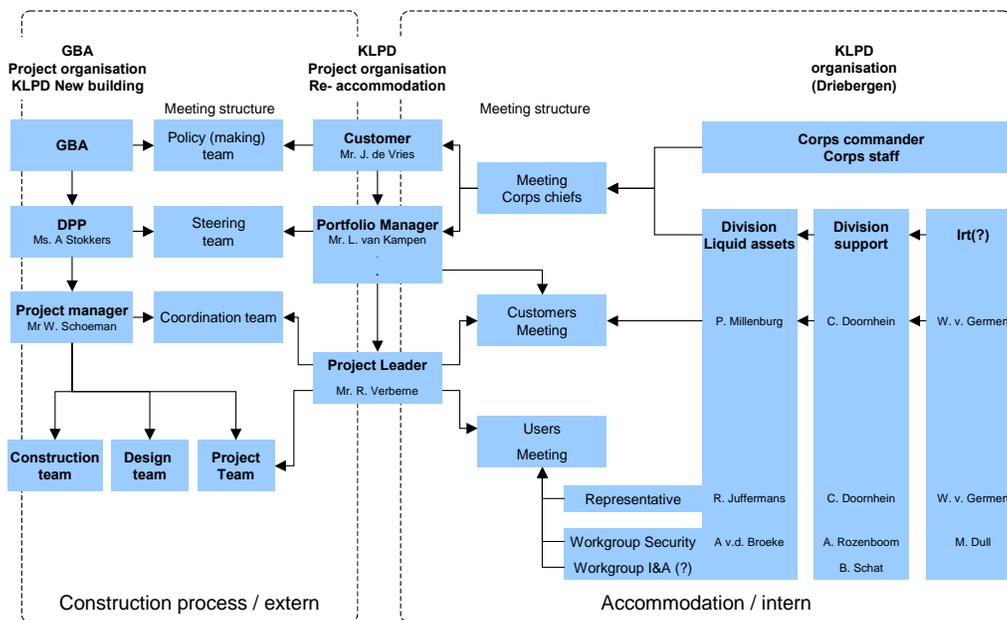


Figure 17 – KLPD internal and external project organization

KLPD and GBA with all project teams acted in this project as the space providers. Both GBA and KLPD provided the funds, although their exact shares are impossible to track as no research was done on the financial issues and level of commitment of each organization in terms of money provided. Mr R Teunissen, representing GBA–AIP, provided advisory services during a short period (March–July 1998) as did Gispen (mid–1998), Century Consult (Sept. 1997) and GBA–DPP (April 2001).

Role

All direct and indirect players play their own role. Personal skills and knowledge influence the course of action. In office innovation, there are four roles: the champion, the agent, the sponsor and the target group.

Champion

The champion of a project is the person who defends and supports ‘the cause’ throughout the entire process. In our case, two persons took personal responsibility for driving the project and overcoming obstacles: the project manager (Werner Schoeman) and the head of General Services at KLPD (Mijndert Demeijer). Both project champions were involved throughout the entire project. The project manager’s function was related to the realization of the entire project; his mission consisted of, among other things, establishing bonds of cooperation with other parties and ensuring completion of the project. He left when the project was concluded. Mijndert Demeijer participated in the project right from the beginning. He is now responsible for the ongoing operation and the maintenance of the facility in the occupational phase.

In an interview with Joop ter Schure and Mijndert Demeijer, they discussed how they wanted to expand office sharing, but were encountering a lot of resistance. During this interview and the one with the project leader, they all stated that the Corps leader was pretty enthusiastic about the concept and had readily agreed to it.

Agents

The function of the agents in the process of the workplace innovation was to support it with knowledge contributions. Often, agents are researchers, consultants, architects or other knowledgeable groups or individuals. Some of the agents of this project at the level of office layout and use were Gispen, GBA and the architect.

Sponsors

KLPD senior managers were the sponsors of the project. The Ministry of Justice, KLPD and GBA funded it. KLPD top management and GBA had the ultimate responsibility and were the ultimate source of decisions.

Target group

The target group comprised those who would benefit from the project, both users and visitors (in this case, all users of building N). This group was a primary source of briefing data.

The introduction of the concept was welcomed with enthusiasm, but expectations surpassed the actual results. The acceptance research shows some inconsistency in how respondents perceive their physical working environment.

4.3 Decision-making

After the project had been given the go-ahead, under the restrictions imposed by the zoning plan and the consequences of this for the definition of the office concept, the first decisions were taken at a higher level. However, not all the important steps were taken, nor were all the right tools used. Some of the important objectives – especially those related to the building level and to budgetary implications – were achieved. However, the workplace decisions at the level of layout perhaps were underestimated.

The office layout issues were discussed at the level of the coordination team in a quiet operational environment. The fact that the decision makers focused more on the operational

aspects without taking into account the objectives and how they should be fulfilled was a major mistake. Communication with users was established but seemed to be unidirectional. Feedback was therefore not very strong.

5 Conclusions and Recommendations

5.1 Workplace solution

Organization

- With the organization having undergone so many changes, this project was one too many.
- The organization is demanding more employees, in the light of the predicted deterioration of public order. This may, in turn, increase the demand for office space, increase the desk sharing rate and promote the introduction of hot-desking policies.
- A close look should be taken at how the physical environment will support growth. It is very important to study different scenarios to detect future trends and potential spatial implications.

Work process

- Information about ICT and filing is too scarce to allow clear conclusions to be drawn. It is advisable to review this matter, paying special attention to filing.

Satisfaction

- Users would prefer to have their own workspace but space managers perceive this requirement as emotional rather than rational.
- The answers given in the acceptance questionnaire are mostly positive. There were some inconsistencies concerning the use of space and how employees assessed it. 'People sometimes change the layout and use cabinets as walls to enclose the open areas and to isolate their workspace from the walkway.' 'Concentration rooms are used wrongly and became storage rooms for printers and PCs.' 'Many respondents hardly use the meeting rooms.' These remarks indicate that some spaces are either misused or underused. Are the employees aware of the facilities that are available to them, and how they should use them?
- Although users share desks, they seem to be unaware of the availability of concentration rooms. Respondents do not prefer or consider using the meeting rooms in the building.
- It would be worthwhile to organize a discussion session with users from different departments to discuss the matters mentioned in the above two paragraphs and to ascertain which corrective actions should be applied. A special point of attention should be the level of noise annoyance.

5.2 Process

General

- At the macro level the project was well organized. It was delivered on time and to budget.
- Finalizing the building was the first priority. The discussion about workspaces at the layout level was quite superfluous.
- The steering group paid a lot of attention to the budget problems.
- The various project teams were fully committed. However, most attention was paid to technical details (i.e. installations).
- Little involvement from HRM and ICT was detected during the research. → The involvement of HRM and ICT with facilities management is a key issue in space development and should be exploited.

- Involvement of users was low. The creation of acceptance is a more dynamic, interactive activity; organizing workshops with time to listen to and to talk with users is fundamental.
- The focus of attention during the project was mainly on building characteristics and technology; the link to people, work and organizational needs appears to have been less relevant.

Conceptual phase

- The decision to innovate was taken while preparing the programme of requirements (1996) based on preliminary work. However by the time the layout was to be realized (1998) no further research (double-check) on time utilization, needs, etc. was done. It is therefore not very clear how useful (influential) the programme of requirements was in the development of the office concept or why it was neglected when designing the workplace.
- The possibility to develop an innovative office concept was introduced in an early phase and kept in mind for a very long period. However when the design and action was to begin, the needs were not scrutinized in detail with different team groups.
- In the absence of a pilot, visiting other projects may help to better understand the project to be developed. Since a pilot was not conducted it would have been sensible to invite some users as well.
- No criteria were defined to assess the project developed at the level of the office layout.

Design phase

- Work processes were studied but the translation into design solutions was not very successful, causing users to complain that they were not listened to. In 1998 GBA-AIP help was very brief and the opportunity to take corrective actions was missed.

Occupation phase

- In the acceptance research it is striking that while KLPD complains about employees misusing the concentration rooms, the users themselves are in general satisfied with the archive space they have.
- The acceptance research revealed some points of conflict; the causes of this are not clear-cut but may originate from the misfit between the work process and the physical environment. There may also be of lack of understanding about the concept and how to better exploit it.

Tools

- The follow-up to some activities (i.e. the presentation by Century Consult) is not clear. Other tools designed to assess satisfaction may be used in the future, but it is important to get back to the original questions and to check the current workplace.

Players

- Sponsors provided the economic means to carry out the project and supported the idea of office innovation. Champions, project manager and the head of General Services at KLPD were fully engaged in delivering the project on time and to budget.
- Communication within and among the various teams seems to have been both organized and effective. Various agents (architects, consultants, suppliers) actively participated (had a say) in different teams.
- Communication between teams and users was sufficient but unidirectional. Users did not have an official say at those meetings. Therefore the feedback received from users was not evident in this study.
- The role of the users was passive. They provided the data for the programme of requirements and were informed throughout the process, but communication was

unidirectional. Unfortunately the knowledge of the work performed was not used maximally. There was not much interaction or feedback.

- Other parties (e.g. advisors) contributed their knowledge, but for unknown reasons some of their recommendations were not taken into account.

Decision-making

- Risk assessment during the process and after implementing the innovative concept was not evident.
- The level at which decisions were taken had a low profile and users did not have much power of decision.

- Understanding the aims of the project, the needs of the organization and the way people work to produce a solution that offers a good match is relevant. A method to ensure that these issues are not forgotten must be established.
- Control mechanisms are very important to keep track of objectives and recommendations. In this project, several important recommendations were not followed up.
- How many steps are described in the process and what to name them are unimportant. What is important is that the needs are clear and the objectives achieved. Having a structured way to look at the process will help. It is also important not only to have the right tools but also to use them meaningfully, striving to achieve the objectives and focusing less on the operation.
- It is important to have a clear understanding right from the beginning whether office innovation is a means to achieve something or merely an end in itself. In either case, the leaders of projects where changes and innovation are involved should make every effort to acquire a clear understanding of the actual needs and to fulfil them. Many projects fail because 'solutions' arise at a very early stage – before the problems are fully understood.
- The development of a pilot project, although time-consuming, may result in time and money savings in the future. Different formulas can be tested and employees can familiarize themselves with the new concept and contribute to improving it.
- The success or failure of a project is reflected by the productivity and health of the staff. It is therefore necessary to focus on reducing not only facility costs but also other, non-monetary costs and benefits
- Users gave conflicting answers to questions about productivity. Means other than self-reported productivity should be used to clarify the relation between productivity and working environment.
- 'Workplace' comprehends everything from the site through the structure to the staff⁶. Differentiating these levels during workplace development and relating them to the decision-making process will facilitate the research and provide some improvements in decision-making. Discussions could be focussed on the topics relevant to each layer in the different decision groups.
- Key issues are to find a good balance between the information needed and the effort exerted, to involve users in identifying the needs, and to create acceptance without reducing the speed or the quality of the project.

⁶ S. Brand. (1994). *How buildings learn*. Penguin USA.

APPENDIX A SOURCES

Interviewees

- Werner Schoeman, former project manager from GBA. 17 September 2002.
- Joop ter Schure, accommodation advisor to the Corps chief and account manager. 23 October 2002.
- Mijndert Demeijer, head of Facility Department, internal project leader for the building projects, KLPD's spokesperson vis-à-vis the population. 23 October 2002.
- Rob Teunissen, former consultant from GBA. 10 January 2003.

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- *Acceptance research of the perception of the innovative office concept in KLPD Driebergen*, 11 April 2001. GBA

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- Memo attached to Draagvlak-onderzoek innovatieve huisvesting
- Bulletin Informatif, 17 May 1999
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- Transcript of interview with ter Schure, Demeijer, 23 October 2002. TUDelft
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