

Proceedings of the workshop on Open spaces at EU institutions versus traditional work spaces: justification, evolution, evaluation and results

Budgetary Affairs

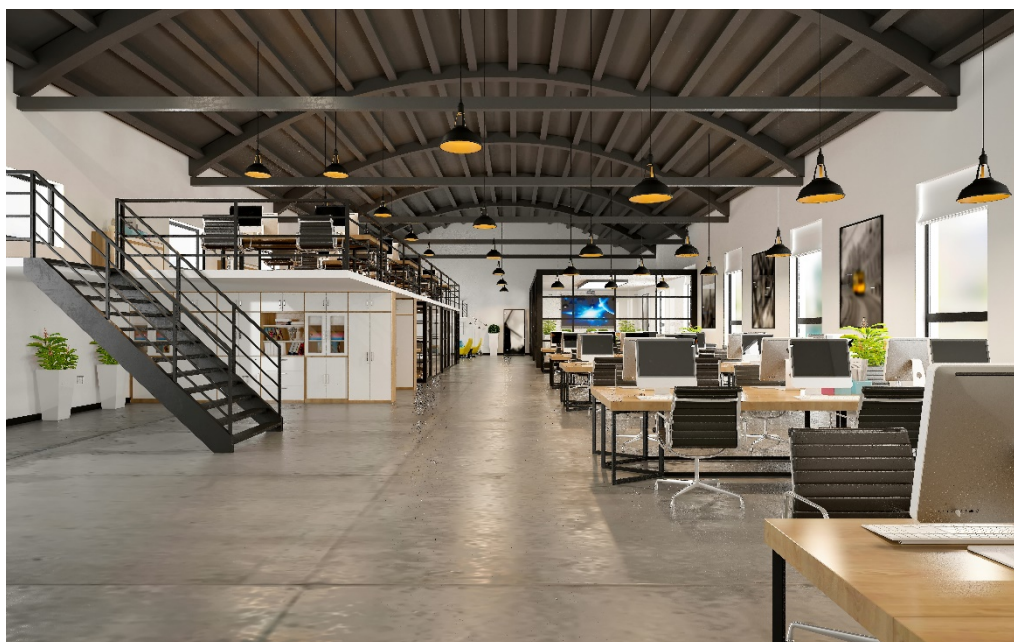


TABLE OF CONTENTS

WORKSHOP PROGRAMME	5
PROCEEDINGS	9
BRIEFING OPEN PLAN OFFICES - THE NEW WAYS OF WORKING	17
BIOGRAPHIES OF SPEAKERS	29
PRESENTATIONS	37
 Presentation by Dr Christina BODIN DANIELSSON, <i>Master of Architecture SAR/MSA, Associate Professor (Docent), Architectural Design & Technology. KTH Royal Institute of Technology, Stockholm, Sweden</i>	 39
 Presentation by Dr Annu HAAPAKANGAS, <i>Specialist Researcher PhD - Healthy Workspaces Unit, Finnish Institute of Occupational Health, Helsinki, Finland</i>	 53
 Presentation by Jessica MARTINEZ ALONSO, <i>European Court of Justice - Member of Staff Committee</i>	 61
 Presentation by Jose CARRASCOSA MORENO, <i>European Court of Auditors - Principal Manager - Information, Workplace and Innovation, Luxembourg</i>	 67
 Presentation by Marc BECQUET, <i>European Commission - Head of Service - OIB, Office for Infrastructure and Logistics, Brussels, Belgium</i>	 75

WORKSHOP PROGRAMME



WORKSHOP ON

Open spaces at EU institutions versus traditional work spaces: justification, evolution, evaluation and results

*organized by the Policy Department on Budgetary Affairs
for
the Committee on Budgetary Control*

Thursday, 29 October 2020

09:00 - 11:00

European Parliament, Brussels

Virtual meeting

WORKSHOP PROGRAMME

Opening remarks and Introduction

09:00-09:05

Ms Isabel GARCÍA MUÑOZ

Vice Chair of the Committee on Budgetary Control
Rapporteur, MEP S&D

Presentations: architecture, design and occupational health

09:05-09:15

Dr Christina BODIN DANIELSSON,

Master of Architecture SAR/MSA, Associate Professor (Docent),
Architectural Design & Technology. KTH Royal Institute of
Technology, Stockholm, Sweden

09:15-09:25 **Dr Annu HAAPAKANGAS,**
Specialist Researcher PhD - Healthy Workspaces Unit, Finish Institute
of Occupational Health, Helsinki, Finland

Questions and answers

09:25-09:45 **Questions & answers**

Presentations: other EU institutions

09:45-09:55 **Jessica MARTINEZ ALONSO**
European Court of Justice - Member of Staff Committee,
Luxembourg.

09:55-10:05 **Jose CARRASCOSA MORENO**
European Court of Auditors - Principal Manager - Information,
Workplace and Innovation, Luxembourg.

10:05-10:15 **Marc BECQUET**
European Commission - Head of Service - OIB, Office for
Infrastructure and Logistics, Brussels, Belgium.

* * *

Questions and answers

10:15-10:35 **Questions & answers**

General debate

10:35-10:55 **General debate**

* * *

Conclusions and Closing remarks

10:55-11:00 **Ms Isabel GARCÍA MUÑOZ, MEP,**
Vice Chair of the Committee on Budgetary Control
Rapporteur, S&D

* * *

Proceedings

Notes from the workshop on Open spaces at EU institutions versus traditional work spaces: justification, evolution, evaluation and results¹

The workshop took place on 29 October 2020.

Opening remarks from Chair and rapporteur Isabel García Muñoz

Chair Ms García Muñoz explained that open space offices are not a new concept and date back to the beginning of the twentieth century. With the introduction of the new ways of working and especially telework the use of office space has become different. Ms García Muñoz emphasised the advantages and disadvantages of open office space.

Advantages of open office spaces:

- Reduction of costs. More people fit in the same amount of space. This is very attractive for start-up companies;
- It increases creativity and innovation;
- It improves teamwork and cooperation between different teams.

Disadvantages of open office spaces:

- Loss of productivity due to noise, temperature and fatigue. It takes about 25 minutes to re-concentrate on a task after a distraction. Women are more affected by this than men;
- The spreading of diseases. This is of high concern with the current Covid crisis;
- Negative impact on the well-being of employees. There is a lack of privacy, idea of being watched and lack of concentration because of conversations on the phone.

Summary of the academic speakers' presentations

Dr Annu Haapakangas focused in her presentation mainly on activity-based offices. In activity-based offices people do not have personal desks but they switch workstations according to their tasks and needs. The flexibility of activity-based offices gives more environmental control to the workers. Control is important for decreasing stress reactions. More research needs to be done in relation to activity-based offices but on a general level it is difficult to say whether private offices and activity-based offices differ. Privacy is rated more positively in private offices. On the other hand design and architecture are rated better in an activity-based office. Job satisfaction and self-rated well-being show contradictory outcomes in different studies. Therefore, more research needs to be done.

Active use of different kinds of workspaces seem to have a positive impact on employees. Workers who change workstations several times a day are more satisfied with the environment and they record higher well-being and higher productivity than workers who are more passive in the way they use office spaces. Nevertheless, the lack of a personal workstation and the need to switch workspaces can also be a stress factor particularly when it is difficult to find a suitable workspace. It can also have a negative influence on personal interaction within teams as it can be difficult to locate colleagues. Interactions across teams can improve and there are solutions for the problem of finding team members.

It is essential for employee well-being and productivity that besides open spaces there are also private and quiet spaces and that there are enough of them and they are easily accessible. It is not only the physical space that affects well-being but also the way people are taken into account in the

¹ Author: Alexandra Pouwels, Policy Department for Budgetary Affairs

process. Organisations need to develop a technology management style and a work culture that supports flexible, paperless and mobile way of working.

Dr Christina Bodin Danielsson shared the results of three studies on office designs. The first study focussed on general well-being and job satisfaction. Two office types show a positive impact on people's health. Both in term of general and emotional health. The results shows that cellular office and activity-based flex offices have a positive impact on employees' health. Negative impact was reported in a traditional open plan office and more specifically medium followed by small sized open plan offices. In terms of job satisfaction activity-based flex offices followed by shared room office (by 2 to 3 persons) had a positive impact. Cellular office only had a positive impact concerning individual work assignments. Negative impact appears to be in a combi office.

The second study focused on the influence of office type on leadership. Employees working in a shared office, shared by 2 to 3 people, have a more negative perception of the leadership. The most positive impact was measured in a medium sized open plan office in which the management and employee share the space.

The third study measured the office design impact on workspace contribution. More clearly on how much do the employees perceive office design to support their job satisfaction, their comfort and their performance. A negative impact was found in an office design with hot-desking. In this setting employees do not have access to an important supportive work environment and they do not have a personal workstation. Women are more negative about workspace contribution in a combi office.

The following conclusion can be made based on the three studies presented. What matters is the ability to have personal control. This is probably the reason why both cellular office and activity-based offices tend to do so well when it comes to health and job satisfaction.

Question and Answer session

MEP M. Peksa asked if privacy has been included in the studies presented. He also asked what the impact is of privacy on open spaces.

Chair Ms García Muñoz asked how gender and age influence employees satisfaction in an open space. Does perception change when employees use the space with the passing of time? Can hot-desking lead to issues with the sense of belonging? How can we involve employees in the designing process of workspaces? There is the issue of the so called fourth wall where people set up their own area in an open space should that be avoided or allowed?

Dr Christina Bodin Danielsson emphasized, that in a well-designed activity-based office privacy is not as affected as in a traditional open plan office. The activity-based office should have a great variety and not only one type of work environment but different features depending on what work activity being done. Age is an important background factor and it appears that noise is a bigger issue for women and older employees. Dr Bodin Danielsson recommended not to use hot-desking in any circumstance. The leadership can have a positive impact on the shift in office designs. The leadership should help the employees to find their new working methods.

Dr Annu Haapakangas underlined that the office needs to be well-designed and that means including employees in the whole process. There need to be a dialogue on what employees' concerns are and what kind of support they need in order to use the space as it is meant to be used. It is quite common that people find it difficult to use activity-based workspaces and they try to take a workstation for themselves and not change it. The sense of belonging and interaction is very complex. It is difficult to say how much influence the physical space has on the sense of belonging

and community. It really depends on the organisation and the space and if there are underlying issues. Collaboration and interaction are not mainly determined by the physical space they are influenced by the culture, the feeling of willingness to collaborate and seeing the benefits for their work.

Summary of the institutional speakers' presentations

Jessica Martinez Alonso explained that in 2013 part of the ECJ staff was reintegrated in the main buildings and rented buildings were abandoned. This also introduced the pilot project on the use of more open plan layouts for the offices. It was done for three directorates of ECJ namely directorate for buildings, directorate for security and directorate for information technology. The objectives were to increase group dynamics, improve communication between colleagues and to increase productivity and efficiency. The introduction of the open plan layout was done without including the staff. A lot of people complained to the staff committee and in 2017 the staff committee decided to conduct a survey amongst staff of the three directorates. There was a 70% respondent's rate to the survey. The problems listed were related to the acoustics and lack of confidentiality. In January 2018, the results of the survey were presented to the administration of ECJ and in April the administration started a working group on the matter. In December 2019, the IT director send out an email with two questions for the staff. One, do you want to go back to closed offices? And if yes, would you agree to smaller offices? Everybody agreed to smaller offices and the IT directorate is back in closed offices. Open spaces are not seen as a bad thing there are still employees working in the IT directorate in an open plan layout.

Jose Carrascosa Moreno described the principles for buildings which ECA is following. The first is that ECA is owning all the buildings, second they want their staff to be doing well and the third is the principle of austerity. Since 2012, all ECA buildings are located on one site in Luxembourg. Within the buildings ECA is creating activity-based workspaces which is possible because auditing is a mixture of individual and teamwork. There are different kind of spaces such as single and double offices, team rooms, coffee corners, kitchens, meeting rooms and children care rooms. Since, ten years ECA is providing its employees with laptops to be able to work remotely. As the work is becoming paperless physical archives are obsolete and replaced with small teaching rooms, kitchens and small rooms for concentration. Good furniture has influence on the success of offices. The concepts of the first projects that were successful are used for future renovations. All the individual offices are kept but besides that we introduce activity-based offices. It can be concluded that the Covid pandemic will influence the way we work. ECA managed to work from home within one day without disruptions and maintaining the high level of performance. ECA is preparing for the future in which offices will be occupied less and the need for common spaces will be bigger. This is the opportunity, to have a more modern staff management that is based on objectives, objective setting and on controlling tasks not controlling people.

Marc Becquet showed that the EC has 24.000 statutory staff in Brussels and has a total of 40 buildings. The EC has currently 477 collaborative spaces which host 4300 people which is 17% of the staff of the EC. The green deal is important in the building strategy of the EC. The carbon emission of the buildings is currently at 35% of the total emissions. The objective of the EC is to make every square meter greener. The EC committed to reduce office space. Therefore, IT elements become more important. The EC uses the three Bs; behaviour, bites and bricks, to keep in mind while changing building policies. The Covid crisis and especially the lockdown was extremely abrupt and the EC switched to teleworking quickly. The EC developed 32.000 remote connections to the server and they became within five days paperless. In the future more structural teleworking will be possible as well as hybrid meetings. It is the plan that staff comes to the office to interact with colleagues on a weekly basis. The new normal is heavily discussed in the EC.

Leena Linnus emphasised that the EP has three different user groups of the office space namely the Members, the administration and the political groups. The Bureau of the EP and DG INLO had in 2018 a comprehensive discussion on the future of buildings and logistics. In April 2018 a new building strategy was presented for the period after 2019. This paper includes the environmental policies, security policies and building policies. There is a flexible principle for every DG concerning the use of office space. The only line that is common is environmental principles and use of collaborative spaces but absolutely without hot-desking. It was also made clear that everybody has their own permanent workstation. In three buildings these new principles were introduced. One in Luxembourg and two in Brussels. For the Brussels buildings a lot of consultations with the management of the DGs were set up to answer to the needs of the management and the staff. The new MEPs have more office space in Brussels and Strasbourg. They also have more flexibility in setting up the offices. The EP is following the trends concerning all the user groups.

General debate and questions and answer session

Joachim Schwieters underlined that the ECJ still has 500 people working together in shared offices of 3 up to 5 persons. It was explained that the pilot project was not a great success as they encountered disadvantages in term of concentration, privacy and the possibility of personalizing the office space. The ECJ underestimated two aspects in the pilot project. First, the complexity of the subject and second the change in behaviour and acoustics. Mr Schwieters emphasized that we need to draw lessons for the future. Always take into account the three Bs: behaviour, bites and bricks. Mr Schwieters explained the example of the European Investment Bank. The EIB was trying to change private offices into open spaces. What is interesting about this experiment is that it started as a building service project then because of technology it became an IT project and at the end it became a HR project because the EIB realised that the most interesting and challenging aspect was the changed management. If you change private office into new ways of working you need to accompany people through this with a changed management approach which is very intensive. An inter-institutional approach in terms of looking at studies, sharing experiences more so than in the past is really essential.

Chair Ms García Muñoz asked all the speakers of the EU institutions the following questions. How can we make the environment attractive? What kind of stimuli should we provide? How can we make sure the future of the workspaces are adequate? What would it look like? Have you looked at the increase of productivity in open spaces? What influence could Covid-19 have on shared office spaces moving forward? Do the exchange of good practices and lessons learned exist between the different institutions and the staff committees?

Jessica Martinez Alonso underlined that a part of the ECJ IT directorate stayed in open spaces. The staff found it better for their work and the administration and the staff committee listened to them. It is important to listen to the needs of the people before saying we will change your way of working or your working environment. Part of the staff is located in smaller open spaces with better acoustics and it works for them. There are colleagues in other directorates that are in small open spaces because their job allows for this kind of environment. It was emphasized that it is very important to have the input of the staff and realise what the administration is able to do with the needs staff is expressing.

Jose Carrascosa Moreno answered that we do not know about the future yet. The institutions need nice facilities that are practical with different types of spaces for different users. If the institutions are able to deliver on that it is going to be successful. Having a nice surrounding is very important both for working from home or in the office. It is going to be more digital so developing a kind of good practice in the use of digital technologies is important. Mr Carrascosa Moreno thinks that the future

will radically change things and that the institutions should see how they can accompany their people to make that more efficient and create more happiness at work.

Marc Becquet said that on the attractiveness and productivity he also shares the view that the institutions have to offer a very good quality environment with flexibility and all the necessary supporting facilities to either work in the office or from home. It is important according to Mr Becquet that the design of office space should be done with the future generation in mind that will join the institutions because they have a different way of seeing the work pattern. They want to work when they want and from where they want. On the question of best practices he answered that there are two bodies involving the various administrations of the various institutions. One in Brussels where the various institutions in Brussels exchange best practices on real estate and office accommodation and one in Luxembourg. The two institutions in Brussels and Luxembourg are also exchanging between themselves. The EC has the joint committees on health and safety to exchange views with staff on real estate. There is one in Brussel and one in Luxembourg and one in the various sites of the joint research centres.

Leena Linnus answered that the EP is focussing on good quality furniture. Ergonomic as well as sustainable furniture. The administration had a lot of good feedback on the new furniture. Other improvements that have been made include placing of acoustic panels, a lot of greenery, coffee corners, kitchenettes, informal sofa areas for staff to be able to have more informal chats. The shared offices are limited in the EP administration. They are only 2 to 4 people maximum except for some very rare requests that come from the staff for example some IT services in DG Communication. They are in much larger areas on their own request. Productivity has absolutely not declined. The EP has not yet all the figures of all the DGs but of those DGs that have done a survey it is shown that there has been an increase of happiness in these new buildings where these new features and styles have been taken on board. Productivity also remained the same or even improved. The Bureau has established the working party on buildings, transport and a green parliament. This party discusses the questions concerning offices and even established recently something called an ideas lab where different offices and other features are possibly being tested by some of the Members. This project is based on very good feedback the EP administration received from 15 Members who served as pilot testers in 2017 and 2018 for different types of offices and office setups. In the administration is the inter-DG steering group on facilities management that meets every second month and discusses all the issues of office well-being of staff as well as office setup on the management level. There is a very open and rather regular discussion between Ms Linnus as DG INLO and our staff committee. The last time Ms Linnus was in front of the plenary of the staff committee was on 5 October 2020. The Adenauer building in Luxembourg was discussed. These kind of meetings happen 2 to 4 times a year. So, there are certainly channels in which the Members and staff are able to influence the future of office space and their way of working in the institution.

Closing remarks

Chair Ms García Muñoz stated that it was a very interesting workshop. Some interesting points were made that will help to think about the new ways of working. Flexibility is very important because there is no one way that fits all solution. The workspace has a direct impact on employees and we need to take things further and look at health satisfaction and well-being as well as other factors such as the perception of leadership. We heard that activity-based offices are more flexible in terms of adapting to various needs and activities that each type of work brings. There were a lot of suggestions to have a positive workspace and have positive stimuli to make it attractive for employees to come to work. Leadership is important for making a success of the transition. Employees should be part of the decision-making process regarding what impacts their workspace. That has not always happened in the past. The pandemic has learned that it is possible to work remotely and become paperless in 5 days. This year we learned a lot on different modes of working and perhaps we are moving towards a mixture of working in the office and distant working. There

are a range of possibilities and challenges for the workspace and Ms García Muñoz hopes that this workshop has been useful in making us think about it and in answering our questions about the topic.

BRIEFING

Open Plan Offices- The new ways of working

The advantages and disadvantages of open office space

KEY FINDINGS

Open office spaces are introduced for the following reason:

- Saving costs on real estate. Real estate expenses are the second largest costs for a company. By creating more workplaces in the same amount of square meters costs can be reduced on buildings and maintenance.
- Increase communication. If people are in closer proximity from one another and move around freely communication will increase.
- Improve team work. As teams are now sharing the same space knowledge sharing will increase both within the same team and across different teams.

The following arguments oppose the introduction of open office spaces:

- Loss of productivity. Employees are distracted faster because of noise or colleagues moving around. It takes on average 25 minutes to resume a task after distraction. In an open office space employees are distracted faster because of phone calls, people walking by or nearby conversations.
- Problems with noise, temperature and fatigue. As said before, noise is one of the main distractions in an open office space. Temperature is managed centrally and it could therefore be too cold for one person and too warm for another. Fatigue is a side effect from noise and temperature and the fact that people have a constant overload of information with the introduction of multiple screens like phone, tablets and computer.
- Increase of sickness. As employees are in closer proximity of one another diseases can spread faster. The spread of diseases raises the amount of sick days taken in a company.
- Decrease of overall well-being of employees. The main cause for the diminishing of well-being is the level of stress. The idea of being watched all the time increases the levels of stress in an open office space.

Open office spaces within the EU institutions:

- The European Commission has open office spaces and is planning to introduce more open office spaces in the future.
- The European Court of Auditors started a pilot project for open office spaces for external and security staff. There are no further plans for the creation of open office spaces.
- European Court of Justice has dropped the idea of open office spaces after a survey from the staff committee among ECJ staff. Staff expressed their reservations to the introduction of open office space.

Introduction

New ways of working introduced a different approach to the use of office space. With the development of laptops, tablets and smart phones, the purpose of offices changed towards a fit the needs concept. This also means that employees can work from anywhere; for example working from home or a cafe. This concept is called telework. The creation of open office space, collaborative work space or activity-based work space were introduced as a result of the new ways of working. These spaces all have in common that they have an open-plan layout in which employees from different teams work together in a common room. There are different reasons why open-plan work spaces are introduced. The main reasons are to improve internal communication, reduction of real-estate costs, promote creative thinking and innovation. Nevertheless, while introducing open office spaces employees encounter negative effects from working in one big common room. Examples of negative effects are loss of productivity, problems with noise, temperature and fatigue, increase of sickness and a decrease in overall well-being of the employee. This briefing will give an overview of both the pros and cons of open office spaces.

The concept of open office spaces has a long history. The idea of working in an open-plan space can be traced back to the early 1900s when the first open work space was created and resembled a factory floor². Until the 1960s open work places were designed for employees in jobs like clerks, secretaries and typists³. From the 1960s on, companies in the United States (US) developed the idea of open spaces divided by cubicles. Cubicles were introduced as a way to cut in real estate costs as the prices in the big cities went up. While cubicles were common in the US, in Europe the use of L-shaped corner desks was very frequent with four to six people working together in a room⁴.

With the introduction of the new ways of working open office spaces are back. Private offices in itself represent a hierarchical order in which every employee of the same team or conducting the same task sits in the same corridor⁵. In open office spaces this is no longer the case because managers and their teams are sitting in the same room. It depends on the type of open space if the same team even sits together or are spread over the floor. Nowadays, many start-ups are using the concept of open office space. This is mainly because it reduces costs which is very attractive for start-ups as they are generally searching for funding resources⁶. Start-ups are often located in cities like San Francisco (Silicon Valley) or New York where the prices for office space are high⁷. Besides start-ups open office spaces are used by a lot of tech companies who want to push for innovation. Currently open office spaces are prevailing in both the private and public sector, in various industries and in most job functions⁸.

² Gan, Kenneth, "[Personal Space and Privacy in Open Offices](#)" (2019). Creative Components. 140 slides.

³ Walsh, John. « [Designing Work: Collaboration Versus Concentration in Open Plan Workspaces?](#) » Level 3 (Dublin Institute of Technology) 12, n° 1 (March 2015).

⁴ Ibid.

⁵ Peteri, Virve, Kirsti Lempiäinen, and Merja Kinnunen. « [From cubicles to open space: An analysis of gendered meanings of workspace](#) ». *European Journal of Cultural Studies*, 12 February 2020.

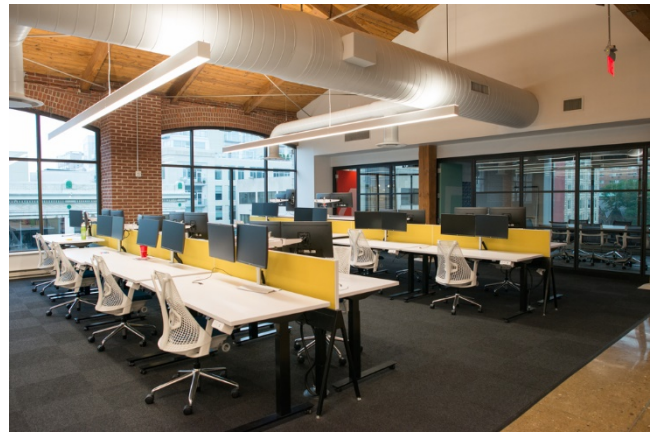
⁶ Gan, Kenneth, "[Personal Space and Privacy in Open Offices](#)" (2019). Creative Components. 140 slides.

⁷ Ibid.

⁸ Walsh, John. « [Designing Work: Collaboration Versus Concentration in Open Plan Workspaces?](#) » Level 3 (Dublin Institute of Technology) 12, n° 1 (March 2015).

Definition of open office spaces.

Open office spaces can be defined as follows: space 'where walls and partitions have been removed and have been replaced with other instruments such as cubicles, plants and furniture to give the sense of separating departments and teams physically'⁹. There are different names used for open office space. For example, traditional open space, collaborative space, activity-based workplaces or activity-based flexible offices. They all have in common that the main workspace is constructed as an open-plan layout where people of different teams work together in one big space. One of the most commonly used open-plan designs is the activity based workspace also called an activity-based flexible office. It does not matter how it is called exactly because the concept is similar. There is an open-plan layout and employees do not have assigned seats¹⁰. Besides the open-plan layout, these offices have multiple workspaces designed for specific activities. For example spaces for social meetings and activities, spaces for bigger meetings and spaces for tasks that require concentration¹¹. The philosophy is that employees will choose the workspace that best suits their current work. It is thereby understood that people change work places during the day¹². That employees do not have an assigned desk is called "hot desking" or "desk sharing"¹³. By requiring employees to work in the same space and searching for a desk, the office enables for spontaneous encounters and more interaction¹⁴.



Technology has made it possible for employees to work from different places. This is why the activity-based workspace became popular. It helps organisations to use the space as efficient as possible and keep up to

- ⁹ Bernie, Caroline. « [An Investigation into the Tacit Knowledge Transfer Process in an Open Plan Office Environment](#) ». *Level 3 (Dublin Institute of Technology)* 12, n° 1 (2015), p12.
- ¹⁰ Haapakangas, Annu, David M. Hallman, Svend Erik Mathiassen, and Helena Jahncke. « [Self-Rated Productivity and Employee Well-Being in Activity-Based Offices: The Role of Environmental Perceptions and Workspace Use](#) ». *Building and Environment* 145 (1 November 2018): 115-24; Gerdenitsch, Cornelia, Christian Korunka, and Guido Hertel. « [Need-Supply Fit in an Activity-Based Flexible Office: A Longitudinal Study During Relocation](#) ». *Environment and Behavior*, 9 March 2017.
- ¹¹ Peteri, Virve, Kirsti Lempiäinen, and Merja Kinnunen. « [From cubicles to open space: An analysis of gendered meanings of workspace](#) ». *European Journal of Cultural Studies*, 12 February 2020.
- ¹² Ibid.
- ¹³ Gerdenitsch, Cornelia, Christian Korunka, and Guido Hertel. « [Need-Supply Fit in an Activity-Based Flexible Office: A Longitudinal Study During Relocation](#) ». *Environment and Behavior*, 9 March 2017.
- ¹⁴ Peteri, Virve, Kirsti Lempiäinen, and Merja Kinnunen. « [From cubicles to open space: An analysis of gendered meanings of workspace](#) ». *European Journal of Cultural Studies*, 12 February 2020.

speed with the new ways of working¹⁵. The development in the information technologies (IT) has contributed to working remotely. For some people working in a cafe, from home or any other preferred place contributes to their performance. Others prefer working in a quiet surrounding¹⁶. An activity-based workplace provides in both needs. Nevertheless, working in an open-plan layout brings both advantages and disadvantages with it for the employer and employee.

The advantages of open office space

The arguments most often used to introduce open office spaces are cost reduction, increased communication and more teamwork. These arguments will be discussed one by one in the next part.

Cost reduction

For most companies the cost of office space is the second largest financial burden¹⁷. Reduction of costs for real estate is therefore a major argument for open office spaces. Despite the costs of real estate, employers do not have to pay for walls and more employees fit in the same amount of square meters¹⁸. It is even argued that increased collaboration would enhance productivity and therefore contribute to cost savings¹⁹. Another reason why real estate costs could be cut, was the introduction of teleworking. Teleworking has as a result that the occupancy rate of employees within the office will go down. As employees work from remote work places, the office space could be used in a more flexible way²⁰ for example by the introduction of quiet spaces, common spaces and relax spaces. Teleworking and open office spaces are therefore a good combination for employers to not provide working spaces for all the employees. As the idea of teleworking is that employees are not all at the same time in the office. This is not a given however as employees still decide by themselves if they want to work in the office or from a remote place. The employer needs to provide work spaces for all employees if they want to work from the office. There is of course another cost that is introduced by the new ways of working and that is the costs of equipment. To be able to work remotely employees need laptops, tablets and smart phones. Nevertheless, these costs will most probably be lower than the costs of real estate.

Increased communication

Open office space provides the opportunity to move around freely and therefore interact more with the people around. This enables creativity and increases internal communication²¹. Networking contributes to improving 'employee morale, increase productivity, and result in innovation'²². A well designed open office space is often considered as the driving force for innovation and productivity because of better communication and knowledge sharing²³. The Corporate Partner Program found that open office spaces 'had twice

¹⁵ Haapakangas, Annu, David M. Hallman, Svend Erik Mathiassen, and Helena Jahncke. « [Self-Rated Productivity and Employee Well-Being in Activity-Based Offices: The Role of Environmental Perceptions and Workspace Use](#) ». *Building and Environment* 145 (1 November 2018): 115-24.

¹⁶ Gan, Kenneth. "Personal Space and Privacy in Open Offices" (2019). Creative Components. 140 slides.

¹⁷ Seddigh, Aram, Cecilia Stenfors, Erik Berntsson, Rasmus Bååth, Sverker Sikström, and Hugo Westerlund. « [The Association between Office Design and Performance on Demanding Cognitive Tasks](#) ». *Journal of Environmental Psychology* 42 (1 June 2015): 172-81.

¹⁸ Bernstein, Ethan. « [Why Open Offices Aren't Working — and How to Fix Them](#) ». *Harvard Business Review*, 29 octobre 2019.

¹⁹ Forastieri, Valentina. [Technical note prepared by SAFEWORK concerning open-plan offices](#). SAFEWORK ILO Staff Union. 24.08.2012.

²⁰ Morrison, Rachel, and Keith Macky. « [The demands and resources arising from shared office spaces](#) ». *Applied Ergonomics* 60 (September 2016).

²¹ Forastieri, Valentina. [Technical note prepared by SAFEWORK concerning open-plan offices](#). SAFEWORK ILO Staff Union. 24.08.2012.

²² Wagner, Amanda, and Anna Nordstrom. « [Open Concept Office: Good for Business](#) ». Corporate Partners Program Green Paper Series. Corporate Partner Programm for UCLA IoES (Institute of the Environment and Sustainability), 2018, p5.

²³ Walsh, John. « [Designing Work: Collaboration Versus Concentration in Open Plan Workspaces?](#) » *Level 3 (Dublin Institute of Technology)* 12, n° 1 (March 2015).

the number of interacting employees than cellular workspaces'²⁴. These interactions can also happen by chance as employees move around the open office space. This can lead to unexpected collaboration²⁵.

Team work

As more employees are seated in the same space, interaction is easier. This is both the case with employees of the same team but also for interaction across teams. Research found that 'employees sitting within 30 meters of each other, within walking distance, shared significantly more knowledge at their workplaces than employees farther away'²⁶. As employees are closer to one another and communicate more in the open office space, they tend to establish friendships at work which in turn contributes to the overall feeling of well-being at the workplace²⁷. While moving around employees also meet colleagues from different teams and this makes cross-team interaction more feasible and easier. Also by overhearing other colleagues talk colleagues can intervene easier in the conversation and share their interest and experiences. With the introduction of activity-based workspaces, employees can choose what kind of space they need to perform their current task. Therefore, they can switch between interaction but also avoid interruptions. Hence, employees can decide for themselves how much interaction they need and want. This in theory will improve productivity as the employees have the opportunity to choose the right environment for their current work.

The disadvantages of open office space

Despite the arguments in favour of open office spaces there are also arguments against the use of it. The following are arguments most often used against open space offices: loss of productivity, problems with noise, temperature or fatigue, increase of sickness and decrease of overall well-being of employees. Below all the arguments against open office space will be discussed.

Loss of productivity

The loss of productivity is the result of the other arguments against the use of open office spaces. Employees struggle to concentrate on their tasks because of noise, decrease of overall well-being and lack of privacy. This is a contradiction to the argument that open office spaces would contribute to an increase in productivity. There is the general idea that the proximity of other team members would provide for more communication and knowledge sharing. Theoretically, this makes sense as employees see their colleagues physically. In practice, people tend to create privacy even in an open-plan layout. As Ethan Bernstein and Ben Waber found in their study that employees in an open office space construct the so called 'fourth wall'²⁸. This means that even if there are no physical walls around them they will create them by using headphones or staring intensely at their screen. As a result their colleagues will respect this 'fourth wall'²⁹ and communication will go down³⁰. Their research showed that in some companies physical interactions went down by

²⁴ Wagner, Amanda, and Anna Nordstrom. « [Open Concept Office: Good for Business](#) ». Corporate Partners Program Green Paper Series. Corporate Partner Programm for UCLA IoES (Institute of the Environment and Sustainability), 2018, p3.

²⁵ Walsh, John. « [Designing Work: Collaboration Versus Concentration in Open Plan Workspaces?](#) » *Level 3 (Dublin Institute of Technology)* 12, n° 1 (March 2015).

²⁶ Wagner, Amanda, and Anna Nordstrom. « [Open Concept Office: Good for Business](#) ». Corporate Partners Program Green Paper Series. Corporate Partner Programm for UCLA IoES (Institute of the Environment and Sustainability), 2018, p3.

²⁷ Bodin Danielsson, Christina, and Töres Theorell. « [Office Employees' Perception of Workspace Contribution: A Gender and Office Design Perspective](#) ». *Environment and Behavior*, 4 April 2018.

²⁸ Bernstein, Ethan, and Ben Waber. « [The Truth About Open Offices](#) ». *Harvard Business Review*, December 2019.

²⁹ Ibid.

³⁰ Bernstein, Ethan. « [Why Open Offices Aren't Working — and How to Fix Them](#) ». *Harvard Business Review*, 29 octobre 2019.

almost 70 percent³¹. The physical interaction was replaced by electronic interaction, mostly through email³². This has a direct influence on social relations and communication³³.

The research of Edward G. Brown shows that 'office workers at all levels lose three to five hours of productive time every day due to unwanted, unneeded and unproductive interruptions'³⁴. Other research shows that employees are distracted every three minutes by either electronic or face-to-face distractions³⁵. It takes about 25 minutes on average to concentrate on a task again after an interruption³⁶. It is therefore difficult to focus on an assignment which needs a high level of concentration in an open office space. Loss of productivity is a hidden cost for companies which can run into billions³⁷.

Noise, temperature and fatigue

Noise is one of the main distractions in an open office space. Noise is caused by phones ringing and nearby conversations³⁸ or other people moving around. It is difficult for employees to focus on their tasks when an activity is going on nearby³⁹. Morrison and Macky argue that 'there are consistent findings that distraction caused by overhearing irrelevant conversations is a major issue in open plan office environments and further, that distraction is negatively linked with employee performance, negative perceptions of the workplace, and/or stress'⁴⁰. Constant noise and low levels of privacy have a negative influence on brain activity and concentration⁴¹. This shows that noise has a big influence on the work environment of employees. Women are more affected by noise disturbance than their male counter parts. Laboratory studies have shown that noise negatively impact motivation and cognitive performance which could lead to fatigue.⁴²

Another common problem in open-plan layout is temperature. A comfortable temperature is for every person different. Some employees like to work in a cold office where others prefer to work in a warmer surrounding. This is very difficult to manage in an open office space where temperature is regulated for the whole area. Not only the temperature is a problem in an open office space, also air quality can cause problems for employees⁴³.

Both the problems of noise and temperature leads to the problem of fatigue. The introduction of multiple screens (computer, tablet or phone) has led to an overload of information on a day-to-day basis. Many people are feeling overwhelmed by the constant float of information. All the information needs to be processed and this leads to a reduction in productivity⁴⁴ and the feeling of fatigue. Employees also have the feeling that they need to be "on" all the time and be aware of everything new that happens. This feeling increases in an open office space as employees have the feeling they are constantly being watched by others⁴⁵. As a result employees are leaving the office late, as they do not want to be the first to leave, and arrive early in the morning as they do not want to be seen as coming late⁴⁶.

³¹ Bernstein, Ethan, and Ben Waber. « [The Truth About Open Offices](#) ». *Harvard Business Review*, December 2019.

³² Bernstein, Ethan. « [Why Open Offices Aren't Working — and How to Fix Them](#) ». *Harvard Business Review*, 29 octobre 2019.

³³ Haapakangas, Annu, Valtteri Hongisto, Johanna Varjo, and Marjaana Lahtinen. « [Benefits of Quiet Workspaces in Open-Plan Offices – Evidence from Two Office Relocations](#) ». *Journal of Environmental Psychology* 56 (1 April 2018): 63-75.

³⁴ Brown, Edward G. « [The Open Office Plan: How to Gain Collaboration without Losing Concentration](#) ». *Nonprofit World*, December 2017, P22.

³⁵ Gan, Kenneth, "Personal Space and Privacy in Open Offices" (2019). Creative Components. 140 slides.

³⁶ Gan, Kenneth, "Personal Space and Privacy in Open Offices" (2019). Creative Components. 140 slides.

³⁷ Forastieri, Valentina. [Technical note prepared by SAFEWORK concerning open-plan offices](#). SAFEWORK ILO Staff Union. 24.08.2012.

³⁸ McCarro, Kieran. « [NTEU Submission – Open Plan Offices – 15 October 2018](#) ». NTEU (National Tertiary Education Union – Adelaide, AU), 15 October 2018.

³⁹ Brown, Edward G. « [The Open Office Plan: How to Gain Collaboration without Losing Concentration](#) ». *Nonprofit World*, December 2017.

⁴⁰ Morrison, Rachel, and Keith Macky. « [The demands and resources arising from shared office spaces](#) ». *Applied Ergonomics* 60 (September 2016), P104.

⁴¹ Forastieri, Valentina. [Technical note prepared by SAFEWORK concerning open-plan offices](#). SAFEWORK ILO Staff Union. 24.08.2012.

⁴² Bodin Danielsson, Christina, and Töres Theorell. « [Office Employees' Perception of Workspace Contribution: A Gender and Office Design Perspective](#) ». *Environment and Behavior*, 4 April 2018.

⁴³ Forastieri, Valentina. [Technical note prepared by SAFEWORK concerning open-plan offices](#). SAFEWORK ILO Staff Union. 24.08.2012.

⁴⁴ Gan, Kenneth, "Personal Space and Privacy in Open Offices" (2019). Creative Components. 140 slides.

⁴⁵ Wagner, Amanda, and Anna Nordstrom. « [Open Concept Office: Good for Business](#) ». Corporate Partners Program Green Paper Series. Corporate Partner Programm for UCLA IoES (Institute of the Environment and Sustainability), 2018.

⁴⁶ Ibid.

Increase of sickness

In an open office space more employees are working together in the same amount of square meters. The spread of diseases is easier in a space where people are in closer proximity of one another. The spread of diseases also increases because of more face-to-face interactions⁴⁷. The Corporate Partner Program stated the following:

*Researchers from the National Research Centre for Working Environment in Denmark found that taking sick days was significantly related to sharing an office. Their study of 2,403 employees found that workers who had an open plan office, with greater than 6 people, had 62% more sick days than workers who had cellular office.*⁴⁸

Short sick leave, one week or less, is higher among employees in open office spaces⁴⁹. Sick leave does not necessarily concern colds or the flu but also the general well-being of employees.

The international crisis of Covid-19 urged employees to work from home as much as possible. It will probably also change the way of working in the offices. As said before diseases spread easier in open office spaces as more people are working in closer proximity of one another. Therefore, the outbreak of Covid-19 could potentially influence the use of open office spaces. The future will tell if Covid-19 meant the end of open office spaces or that open office spaces are being updated with the latest protection against diseases.

Employee overall well-being

One of the main indicators of overall well-being is the level of stress. Working in an open office space increases 'stress, the mental workload, poor performance, conflict, high blood pressure, lower job satisfaction and internal motivation' and has as a result 'a high staff turnover'⁵⁰. The dissatisfaction of working in an open office space has a direct influence on the psychological and physical well-being of employees. The lack of privacy contributes to the feeling of stress⁵¹. Decreased privacy also adds to feelings of crowding and territoriality⁵² which in turn leads to coping strategies. For example: withdrawal, decreased cooperation or making it unpleasant to work together and avoid communication⁵³. Employees want to signal to their colleagues that they are busy so they look intently at their work. Other colleagues do not want to disturb so a norm is created. These norms form even quicker in an open office space as colleagues see each other the whole time⁵⁴.

Another problem that adds to a decrease in overall well-being is the loss of personalisation. With the introduction of hot-desking (nobody has their own assigned desk) employees are not allowed to decorate their workspace or leave papers on their desk. Decorating the workspace increases the feeling of identity, positive emotions, reduces stress and give a feeling of control at work⁵⁵. Lack of personalisation of the workspace does not only reduces the identity of one self but likewise a lack of team identification⁵⁶. It was even found that productivity went down 15 percent by not being allowed to personalising one's desk. The explanation

⁴⁷ Wagner, Amanda, and Anna Nordstrom. « [Open Concept Office: Good for Business](#) ». Corporate Partners Program Green Paper Series. Corporate Partner Programm for UCLA IoES (Institute of the Environment and Sustainability), 2018.

⁴⁸ Ibid, P7.

⁴⁹ Bodin Danielsson, Christina, and Töres Theorell. « [Office Employees' Perception of Workspace Contribution: A Gender and Office Design Perspective](#) ». *Environment and Behavior*, 4 April 2018.

⁵⁰ Forastieri, Valentina. [Technical note prepared by SAFEWORK concerning open-plan offices](#). SAFEWORK ILO Staff Union. 24.08.2012, P1.

⁵¹ Haapakangas, Annu, Valtteri Hongisto, Johanna Varjo, and Marjaana Lahtinen. « [Benefits of Quiet Workspaces in Open-Plan Offices – Evidence from Two Office Relocations](#) ». *Journal of Environmental Psychology* 56 (1 April 2018): 63-75.

⁵² Roberts, Adam C., Hui Shan Yap, Kian Woon Kwok, Josip Car, Chee-Kiong Soh, and George I. Christopoulos. « [The Cubicle Deconstructed: Simple Visual Enclosure Improves Perseverance](#) ». *Journal of Environmental Psychology* 63 (1 June 2019): 60-73.

⁵³ Morrison, Rachel, and Keith Macky. « [The demands and resources arising from shared office spaces](#) ». *Applied Ergonomics* 60 (September 2016).

⁵⁴ Bernstein, Ethan. « [Why Open Offices Aren't Working — and How to Fix Them](#) ». *Harvard Business Review*, 29 octobre 2019.

⁵⁵ Morrison, Rachel, and Keith Macky. « [The demands and resources arising from shared office spaces](#) ». *Applied Ergonomics* 60 (September 2016).

⁵⁶ Haapakangas, Annu, David M. Hallman, Svend Erik Mathiassen, and Helena Jahncke. « [Self-Rated Productivity and Employee Well-Being in Activity-Based Offices: The Role of Environmental Perceptions and Workspace Use](#) ». *Building and Environment* 145 (1 November 2018): 115-24.

for this is that employees do not feel comfortable in their surrounding⁵⁷. Hot desking also causes problems with colleagues. With the hot desking concept nobody has an assigned desk nevertheless, employees choose a preferred desk and stayed to that one and their colleagues knew which desk this was⁵⁸. This behaviour can lead to negative relationships, distrust and a worsening in co-worker relationships⁵⁹.

This shows that the overall well-being of employees is affected by working in an open office space. It should be kept in mind though that different factors influence the adaptability of employees. For example age, sociability and seniority are factors that affect how well employees cope with change. Another factor is if employees moved from a private office to an open office space as they often experience it as 'a loss of status and benefits'⁶⁰.

Open office spaces in the EU Institutions

Below you will find an overview of the open office spaces in different EU institutions. Table one shows the total amount of open office spaces in Brussels and Luxembourg and the number of square meters necessary for different type of offices.

Table 1 Number of open office spaces per institution

	EC (Brussels)	ECA	ECJ
Number of open office spaces	477	24 as part of the pilot project	Still have about 500 people in shared offices of 3, 4 or 5 people
Number of people per Square meter	Individual office: 10 sqm	As ECA does not have open space besides the pilot project so most offices are occupied by one or two people	The ECJ has dropped the plans for open office space after a survey among staff
	Shared office (between 2 to 4 people): 8 sqm		
	Collaborative spaces (as of 5 people): 7 sqm		

Source: questions raised by email to the different institutions.

The European Commission

The main reasons for the European Commission (EC) to introduce open office spaces or collaborative spaces are to 'become a more agile, flexible and modern service able to respond quickly to changing needs and priorities'⁶¹. By using different types of workspaces they could also respond for example to the creation of temporary task forces or intensification of cross-DGs collaboration. It also contributes to optimising the work space and to renew and improve the working environment. Open office spaces also contribute to cope with the Commission's budgetary constraints of office spaces' reduction⁶².

In 2019, the EC has created a document on the development of the workplace: "Communication to the Commission: The workplace of the future in the European Commission",. An important concept for the EC is that there is no one-size fits-all for working, offices and technology. The EC wants an approach that fits the task

⁵⁷ Forastieri, Valentina. [Technical note prepared by SAFEWORK concerning open-plan offices](#). SAFEWORK ILO Staff Union. 24.08.2012.

⁵⁸ Peteri, Virve, Kirsti Lempiäinen, and Merja Kinnunen. « [From cubicles to open space: An analysis of gendered meanings of workspace](#) ». *European Journal of Cultural Studies*, 12 February 2020.

⁵⁹ Morrison, Rachel, and Keith Macky. « [The demands and resources arising from shared office spaces](#) ». *Applied Ergonomics* 60 (September 2016).

⁶⁰ Forastieri, Valentina. [Technical note prepared by SAFEWORK concerning open-plan offices](#). SAFEWORK ILO Staff Union. 24.08.2012, p2.

⁶¹ Email exchange with the European Commission.

⁶² Email exchange with the European Commission.

an employee is working on. The workspace should be made suitable to fit the norm of team-based collaborative working and knowledge-sharing. The open office spaces (the EC calls them collaborative spaces) should include areas for work that needs a high level of concentration and for work that needs to be performed in a team. Hot-desking (or desk sharing) should also be considered for those offices that have a low occupation rate. A low occupation rate is seen as the average presence of staff is lower than two-thirds of employees in the office. As the layout of the offices will be based on building blocks they can vary in the numbers of certain types of workspaces such as quiet spaces, social areas or a mix of those. 'The configuration of workspace should always be informed by a proper needs assessment and a consideration of the cost-effective options available'⁶³. The staff that will be affected by the changes should be included in the process of implementation. Team leaders and managers should give an example by using the same kind of workspaces as their staff.

The EC has created 477 open office spaces (zones) in Brussels since 2013 (see table 1). As open office spaces need less square meters per staff member than private offices they result in savings costs which the EC wants to invest in 'physical, digital and well-being aspects of future workspace'⁶⁴.

The European Court of Auditors

The European Court of Auditors (ECA) has a general rule that all staff should occupy a single or shared office with two people. ECA has offices for more than two people for external consultants in IT and security staff. A pilot project started for open office spaces for corporate communication teams and the Legal Service in 2016. During the pilot the idea of kitchen corners, small discussions rooms, etc. was tested. Some of the elements of the pilot project were applied in the renewal of the K2 building although the main strategy of single or double occupancy office remained the rule. Therefore, no significant cost reductions were made for ECA as there are no open office spaces in place apart from the pilot project. The pilot project was introduced as a means of trying out new working habits instead of cost reduction.

The distribution of the ECA offices are as follows:

- 723 offices are occupied by one person (69% of the employees)
- 97 offices are occupied by 2 employees
- 88% of staff are working in individual offices or shared office with two people
- 24 offices (131 employees, most of them are external staff and security staff) are occupied by more than two people (the largest being 14 workplaces). Regarding the security staff the occupation is not continuous as the teams are working in shifts, night and week-ends included. Not all external staff is working daily either.⁶⁵

The European Court of Justice

The European Court of Justice (ECJ) decided to not introduce open office spaces after a survey was conducted among their staff which was reluctant for the introduction of open office spaces. The survey⁶⁶ executed by the staff committee of ECJ came to the following conclusions:

- 68% prefer a private office instead of an open office space
- 61% find working in an open office space annoying and 7% find it unbearable
- 40% of the respondents said they would not mind sharing an office with no more than four people

⁶³ Communication to the Commission: The workplace of the future in the European Commission, 2019.

⁶⁴ Communication to the Commission, 2019.

⁶⁵ Email exchange with the European Court of Auditors.

⁶⁶ Comité du personnel open space - Rapport Résultats du Sondage, 2017.

87% have problems with concentration while working in an open office space¹

This survey shows that employees prefer a working environment where they can concentrate on their work and are not distracted by noise and other colleagues.

Conclusion

The concept of open office spaces is a topic of discussion. While it could contribute to the reduction of costs, improve team work and communication it affects employees overall well-being and productivity. The future of open office space is unsure with the outbreak of Covid-19, as diseases spread faster in an open office space where people are closer to one another. Some researchers suggest that open office space will continue for those companies that need a high level of team work and to save costs in the long term². The use of open office space should be based on the common goal of the company and they should communicate these goals to their employees. The best way to let employees adjust better to an open office space is to include them in the designing process. This will make the goals of the new work environment clear and helps them to create the best working space for them. In the end this could help to avoid the pitfalls of open office spaces.

¹ Comité du personnel open space - Rapport Résultats du Sondage, 2017.

² Forastieri, Valentina. [Technical note prepared by SAFEWORK concerning open-plan offices](#). SAFEWORK ILO Staff Union. 24.08.2012.

Disclaimer and copyright. The opinions expressed in this document are the sole responsibility of the authors and do not necessarily represent the official position of the European Parliament. Reproduction and translation for non-commercial purposes are authorised, provided the source is acknowledged and the European Parliament is given prior notice and sent a copy. © European Union, 2020.
© Image on page 3 used under licence from Shutterstock.com

Administrator responsible: Niels FISCHER

Contact: Poldep-Budg@ep.europa.eu

This document is available on the internet at: www.europarl.europa.eu/supporting-analyses

Print ISBN 978-92-846-7309-4 | doi:10.2861/655233 | QA-02-20-878-EN-C

PDF ISBN 978-92-846-7308-7 | doi:10.2861/104979 | QA-02-20-878-EN-N

BIOGRAPHIES OF SPEAKERS



Dr Christina BODIN DANIELSSON,
Master of Architecture MSA/SAR
Associate Professor in Architecture (human-environment interaction)

Current position - employment:

Research Associate professor (docent) in Architecture. Researcher/teacher (part time 20-100%, varies)

Period: Subject area: Human-environment interaction, specialized in office design
2014-11-23– Architectural Design and Technology, School of Architecture, KTH
Tel.: +46(0)8-790 85 41, E-mail: christina.bodin.danielsson@arch.kth.se
Parental leave: 2nd child: Nov., 2014-May, 2015 (various periods)

Architectural Architect SAR/MSA, specialist in human-environment interaction and office design

practise Brunnberg & Forshed Arkitektkontor AB (part time 20-60%, varies)

Period: Kungsholms strand 135A, 112 48 Stockholm, Sweden)

2006-03-06 +46(0)8-617 61 00, +46(0)8-255 7858;
E-mail: christina.bodin.danielsson@brunnbergoforshed.se
Full-time research leave: 2012-09-01 until 2015-08-31

Previous employments (research and architectural practise):

- Post doc at the Stress Research Institute, Stockholm University, 2012-2014
- Researcher and guest teacher, School of Architecture, KTH, 2010-2011
- PhD student, KTH (School of Technology & Health, School of Architecture), 2002-10. Leave of absence: Parental leave 1st child: Aug.- mid-Febr. 2008/09, June 2013, July-Aug. 2014, July-Aug. 2018

Research visits:

- Cornell University, USA. Visiting Prof. G. Evans, Dept. Design & Env. Analysis, Febr.– mid-May, 2015
- Melbourne Business School, University of Melbourne. Australia, Dec-March, 2012/13
- Centre of Org. Behaviour, School of Psychology, Univ. of Queensland, Australia, Dec.-Febr. 2011/12
- Dept. of Arch. Techn., Cape Peninsula Univ. of Technology, South Africa, Nov.-Jan. 2009/10
- College of Design, Arizona State University, USA Nov.-Jan. 2005/06

Educational qualification:

- Associate professor in Architecture (docent, KTH, 2017)
- Doctoral of Philosophy in Architecture, KTH, 2010. Title: The Office - An Explorative Study of
- Architectural Design's Impact on Health, Job Satisfaction & Well-being (2010, 2nd Ed. 2014)
- Master of Architecture, Dept. of Architecture, LTH, Lund University, 1997
- Interior design and furniture design, HKU University of Arts, Utrecht, Netherlands (1994/95)



Dr Annu HAAPAKANGAS,
*Specialist Researcher, Healthy Workspaces, Finnish Institute
of Occupational Health*

Short biography for Dr Annu Haapakangas /Workshop on 'Open spaces at EU institutions versus traditional work spaces: justification, evolution, evaluation and results' 29 October 2020

Dr Annu Haapakangas is a Specialist Researcher who works in Healthy Workspaces unit at the Finnish Institute of Occupational Health, Helsinki. With a background in cognitive psychology and occupational health psychology, she specializes in the effects of office environments on human perceptions, well-being, and productivity. Her expertise also includes the effects of office noise on workers and related room acoustic solutions. She has been involved in interdisciplinary research on the impacts of open office designs since 2007.

Jessica MARTINEZ ALONSO,
European Court of Justice - Member of Staff Committee

I grew up in Liège, first generation born in Belgium from a Spanish family, the typical they fled the country and the dictatorship to stay alive. I started my career in the institutions in 2007, at the Commission, at the Spain Geographical Unit within DG REGIO. Where I remained until 2013, occupying various positions: in the training team, human resources, and finally in the Planning and CAD unit. I then held a position in the European Parliament, in the travel expenses reimbursement unit, before arriving at the Court of Justice, in the IT department, in 2015.

I am currently a member of the Staff Committee, a member of health and safety joint committee and secretary in the Portfolio Planning and Resource Management unit.

I am Spanish but born in Belgium, I grew up with the idea that Europe is our chance for a better future.

Originally, from Liège, Belgium, I have lived in Arlon since 2015 because I got closer to my workplace in Luxembourg.

My favorite hobbies are taking care of my dog, a 5-year-old boxer, video games and relaxing time with friends.

My goal for the future is to find the motivation to exercise regularly and finish my Christmas shopping list before December 24th.

When I arrived at the court of Justice, all my directorate was in open space offices. Since then, we went back to normal offices and I am delighted to share this experience with you.



José María CARRASCOSA MORENO,
*Principal Manager, Directorate of 'Information,
Workplace and Innovation' of the European Court of
Auditors*

Education:

1991 Diploma in Computer Science – Faculty of Informatics, Universidad Politécnica de Madrid, Spain

1992 Masters degree in Computer Based Modelling and Simulation, University of Sunderland, United Kingdom

Professional experience:

1994 – 1995 IT Consultant at Coritel, a Spanish ICT firm

1995 – 2000 IT Project Manager at Helvetia Insurance in Spain

2000 – 2010 European Commission Official at DG DIGIT in Luxembourg

2010 – 2020 European Court of Auditors Head of Unit / Principal Manager in Luxembourg

Mr Carrascosa is a Principal Manager within the Directorate of 'Information, Workplace and Innovation' of the European Court of Auditors.

His responsibilities cover the management of the Court IT and physical infrastructures. His current duties are:

- Manage the IT Operations team in charge of the Data Centre, the Network and the IT Security infrastructures of the Court, ensuring the business continuity of ECA IT services.
- Lead the team in charge of building construction projects and facilities management.
- Elaborate and implement the Court IT Strategy.
- Provide advice to the Secretary General in technological and workplace matters
- Lead the adoption of the new technological platform of the Court, increasing the efficiency of ECA IT services and fostering smooth innovations of its digital and physical workplace.

Mr Carrascosa strongly believes that an improved workplace, encompassing innovative IT tools, modern building facilities and improved working arrangements are crucial elements for first-class organizations like the European Institutions.



Marc BECQUET,
European Commission - Head of Service - OIB, Office
for Infrastructure and Logistics

Academic Qualifications:

- Civil Engineer in Electrical Engineering and Mechanical Engineering (MSc) - Ecole Polytechnique, Université Libre de Bruxelles, 1983
- PhD in Applied Science - Ecole Polytechnique, Université Libre de Bruxelles, 1987

Professional experience:

- From May 2020 until now. DG: OIB (Office for Infrastructure and Logistics Brussels)
- Job title: Director of the Office / Head of Service.
- From November 2016 until April 2020. DG: OIL (Office for Infrastructure and Logistics Luxembourg). Job title: Director of the Office / Head of Service.
- From January 2016 until end October 2016. DG/Unit: HR.D.2. Job title: Head of Unit
- Functions and duties: Manage the Unit Working Environment & Safety.
- From April 2015 until end December 2015. DG/Unit: HR.DS. Job title: Director ad interim
- Functions and duties: Manage the Security Directorate.
- From May 2010 until end March 2015. DG/Unit: HR D.2 (before 1st Jan 2016, HR DS.06)
- Job title: Head of Unit. Functions and duties: Manage the Unit Health and Safety Policy.
- From: January 2009 until end April 2010. DG/Unit: HR DS/ADV01. Job title: Advisor to the Director of DS (seconded from JRC)
- From: January 2008 until end December 2008. DG/Unit: JRC/ADV02. Job title: Advisor to the Director General, in charge of Operational Security and Safety of Scientific Infrastructures of the JRC.
- From: November 2004 until end December 2007. DG/Unit: JRC/02. Job title: Head of Unit, Operational Security and Safety of Scientific Infrastructures of the JRC.
- From: September 2002 until end October 2004. DG/Unit: JRC/F04. Job title: Head of High Flux Reactor (HFR) Unit of the JRC Institute for Energy in Petten.
- From: March 1998 until end August 2002. DG/Unit: JRC. Job title: Assistant to the Director General
- From: July 1993 until end February 1998. DG/Unit: JRC-Institute for Advanced Material (today Institute for Energy, IE), Petten, the Netherlands. Job title: Head of Sector. In charge of Competitive activities and PR.
- From: December 1989 until end June 1993. DG/Unit: JRC-Institute for Institute of System Engineering and Informatics (today Institute for the Protection and the Security of the Citizen, IPSC), Ispra, Italy. Job title: Scientific Officer, Thermonuclear Fusion Programme.

PRESENTATIONS

Presentation by Dr Christina BODIN DANIELSSON

“Architecture & Office design”

ARCHITECTURE & OFFICE DESIGN – ITS IMPACT ON EMPLOYEES & ORGANIZATIONS

Dr Christina Bodin Danielsson/ Associate professor in Architecture, Master of Architecture SAR/MSA

ABOUT ME

2

- **Dr Christina Bodin Danielsson,**
Master of Architecture MSA/SAR
Associate Professor in Architecture (human-environment interaction)
- **Research area:**
Office Design's Influence on the individual & organization
(at an individual and group level)
- **Interdisciplinary research area:**
Starting point - Architecture
But it expands into areas like:
 - Organization & management theory
 - Environmental psychology
 - Occupational health
 - Stress & social medicine



ARCHITECTURE & OFFICE DESIGN

MY PUBLICATIONS – POPULAR SCIENCE & SCIENTIFIC PUBLICATIONS

3

BOOKS & BOOK CHAPTERS

- **Book** – “What is a good office? Different perspectives on the most common workplace in Sweden (the Western World)”
- **Book chapters in the anthologies** –
 - 1 - “Product experience”
 - 2 – Le Confort au travail” (French book)
 - 3 – The Office – an exploratory study on office design’s impact
 - 4 – Lean in working life – lean offices
 - 5 – Organizational behavior & the physical environment
 - 6 – The Effects of Environment on Product Design & Evaluation



SCIENTIFIC ARTICLES (in peer-review journals)

- 27 scientific articles in the interdisciplinary field of human-environment interaction with a focus on office environments
- **Example of subject investigated:**
 - “Pleasantness” “Environmental satisfaction” “Workplace conflicts” “Employee Branding”
 - “Job Satisfaction” “Leadership” “Sick leaves” “Emotional health” “Preference” “Identification”

ARCHITECTURE & OFFICE DESIGN

OVERVIEW OF PRESENTATION

- History of the office & different architectural designs
- Identified office type in contemporary office design
- What does the research say?
Presentation of some of my office research
- **Conclusions:**
How to have a “good” office work environment according to research



Maquire Bank, Sydney

Dr Christina Bodin Danielsson/ Associate professor in Architecture, Master of Architecture SAR/MSA

ARCHITECTURE & OFFICE DESIGN

HISTORY OF THE OFFICE & DIFFERENT ARCHITECTURAL DESIGNS

5

- **Late 19th century – The Office concept – Industrialism:**
 - Administration in relation to production at local manufacturers (Pic 1 & 2 – Cell office & shared room office)
 - A growth of administration, need for bank service & insurances
- **1920-40s:**
 - **Urbanism** = a need for administrative workforce in growing cities
 - Women enter the labour market
 - Open plan offices – open plan office surveillance = Scientific management (FredrickTaylor) (Pic. 3 & 4)
- **1950-60s:**
 - **Bürolandschaft** (the democratic open plan office)
 - Managers and employees in the same office workspace (Pic. 5)

ARCHITECTURE & OFFICE DESIGN

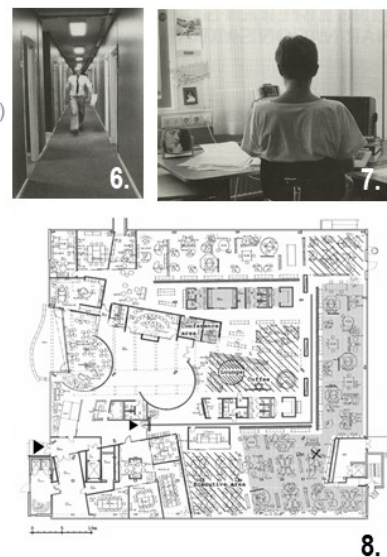


HISTORY OF THE OFFICE & DIFFERENT ARCHITECTURAL DESIGNS

6

- **1960-70s: Democratisation movement - Employee legislation**
 - Employee position strengthens – Co-Determination Act (Scandinavia)
 - Breakthrough of **cell office** for employees at all job ranks
 - Room size reflects status/ job rank (Pic. 6 & 7)
- **1980-90s: “Yuppie-era” Media/ IT & flexibility**
 - Introduction of activity-based **flex office (A-FO)** (Pic. 8)
- **1990-2000: Increased criticism of A-FO**
 - E.g. personal workstation a “human need” = increased stress
 - As a reaction – **traditional open plan office** becomes popular

ARCHITECTURE & OFFICE DESIGN



HISTORY OF THE OFFICE & DIFFERENT ARCHITECTURAL DESIGNS

7

- 2000: The millenium & IT era (the "IT bubble")
 - 24/7 work
 - "Disneyfication"- employee branding by office design (e.g. Google") (Pic. 9 – Google office, Stockholm, Sweden)
- 2000-10s: traditional open plan office & cell office
 - Choice of office type based on: line of business & labour market sector
- Year 2009 – comeback of activity-based flex office (A-FO)
 - Macquire Bank, Sydney (Australia) (Pic. 10, 11)
 - Movement – due to digital revolution & focus on flexibility/cost m2 (due to globalization)
 - AFO - inspires traditional open plan offices
 - Cell office still most common office type, followed by medium-sized open plan office (10-24/pers. room)
- Year 2020 – "Covid19 – office" ?
 - Remote working & infection-controlled office spaces



7 OFFICE TYPES IN CONTEMPORARY OFFICE DESIGN

8

- Defined by
ARCHITECTURAL & FUNCTIONAL FEATURES *
- Individual & smaller, shared offices:
 - 1 – Cell office (personal office room)
 - 2 – Shared room office (2-3 per./room)
- Traditional open plan offices:
 - 3 – Small open plan office (4-9 per./room)
 - 4 – Medium-sized open plan office (10-24 per./room)
 - 5 – Large open plan office (>24 per./room)
- Activity-based & more flexible office types:
 - 6 – Flex office
 - 7 – Combi-office

6

ARCHITECTURE & OFFICE DESIGN

* Bodin Danielsson, C. (2010, 2014, 2nd ed.).
THE OFFICE - An Explorative Study. Architectural Design's Impact on
Health, Job Satisfaction & Well-being

■ DISTRIBUTION OF OFFICE TYPES WITHIN ORGANIZATIONS (E.g. Study on Health & Job Satisfaction)

9

Company / Div. larger company (Total= 485 people)	Line of business	Cell-Office (n=137)	Shared-room (n=28)	Small open-plan Office (n=44)	Medium open-plan Office (n=33)	Large open-plan Office (n=77)	Activity-based Flex-office (n=84)	Activity-based Combi-office (n=39)
Company 1	Media, IT							
Company 2	Techn. profes.							
Company 3	Techn. profes.							
Company 4	Techn. profes.							
Company 5	Techn. profes.							
Company 6	Techn. profes.							
Company 7	Pers. & econ. guid.							
Company 8	Pers. & econ. guid.							
Company 9	Media, IT							
Company 10	Techn. profes.							
Company 11 (div.)	Business adm./manag.							
Company 12 (div.)	Business adm./manag.							
Company 13 (div.)	Business adm./manag.							
Company 14 (div.)	Business adm./manag.							
Company 15	Media, IT							
Company 16	Pers. & econ. guid.							
Company 17	Media, IT							
Company 18	Pers. & econ. guid.							
Company 19	Media, IT							
Company 20	Media, IT							
Company 21	Media, IT							
Company 22	Media, IT							
Company 23	Pers. & econ. guid.							
Company 24	Media, IT							
Company 25	Media, IT							
Company 26	Media, IT							
Company 28	Media, IT							

Note:
From 491 subjects 3 were excluded since they had no information on office type, and the 3 subjects from the service were excluded, since that number were too small for analysis.

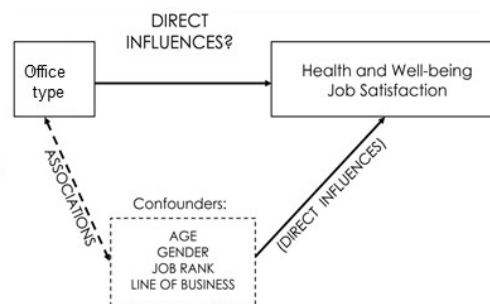
■ WHAT DOES RESEARCH SAY? PRESENTATION OF SOME OF MY RESEARCH

10

OFFICE DESIGN'S IMPACT ON EMPLOYEES' ...

- **STUDY 1: Health status & Job Satisfaction**
- **STUDY 2: Perception of Leadership**
- **STUDY 3: Satisfaction with Workspace Contribution**
(Job Satisfaction, "Comfort", Performance)

- Investigates office type's per se influence for this
- Doing so, we controlled for background factors in the analysis (age, education, sex, job rank, labour mark, sector, line of business)



ARCHITECTURE & OFFICE DESIGN

STUDY 1: OFFICE TYPE'S INFLUENCE ON HEALTH STATUS & JOB SATISFACTION

11

BASED ON:

- Data collected 2003 in 26 different offices from 24 different organizations (4 offices from different divisions within the same company)
- Sample: 485 persons working in 7 identified office types
- Sample from the larger Stockholm area (inner city offices, suburban offices)
- Organizations worked in four line of business:
 - 1) Business administration/management
 - 2) Media/IT,
 - 3) Personal & economic guidance
 - 4) Technical professions

Office Type in Relation to
Health, Well-Being, and
Job Satisfaction Among
Employees

Environment and Behavior
Volume 36 Number 5
September 2008 436-448
© 2008 Sage Publications
10.1177/1080400908319106
http://ebj.sagepub.com
hosted at
http://online.sagepub.com

Environment
& Behavior
(2008)

ARCHITECTURE & OFFICE DESIGN

STUDY 1: OFFICE TYPE'S INFLUENCE ON HEALTH STATUS & JOB SATISFACTION

12

- **RESULTS** Table 3. Health outcome among 469 office workers. Percentage of subjects with specified outcome in each office-type and Odds Ratios (OR) with 95% confidence intervals in brackets, with cell-office as reference category, and after adjustment with age, gender, job rank and market division in a multivariate logistic regression analysis.

Outcome HEALTH	Cell-office (Ref.) n=131	Shared-Room n=26	Small open-plan office n=43	Med. open-plan office n=56	Large Open-plan n=75	Act.based flex-office n=81	Act. based combi-office n=57	TOTAL n=469	P-value for Office type ¹
Sick leave: Any sick leave (1-365 days/year)	61% 1.0	73% 1.2 (0.5-2.6)	71% 1.1 (0.6-2.1)	80% 1.8 (0.9-4.0)	62% 0.8 (0.4-1.4)	57% <u>0.6</u> <u>(0.3-1.0)</u>	84% 2.2 (0.8-5.6)	67%	Univariate <u>0.006</u> Multivariate <u>0.02</u>
Sick leave: >7 days/year	14% 1.0	15% 1.0 (0.3-3.5)	10% 0.4 (0.1-1.5)	24% 1.3 (0.5-3.3)	21% 1.3 (0.6-3.1)	12% 0.6 (0.2-1.5)	14% 1.0 (0.4-2.6)	16%	Univariate 0.43 Multivariate 0.54
General health: Not very good	32% 1.0	54% <u>2.3</u> <u>(1.1-4.9)</u>	56% <u>2.2</u> <u>(1.0-4.7)</u>	55% <u>2.2</u> <u>(1.1-4.3)</u>	49% 1.7 (1.0-3.1)	38% 1.2 (0.6-2.3)	40% 1.5 (0.7-3.1)	43%	Univariate <u>0.018</u> Multivariate 0.20
Physical/Psych problems: Interference in social life	8% 1.0	12% 1.1 (0.4-2.9)	23% <u>2.3</u> <u>(1.1-4.9)</u>	18% 1.6 (0.5-5.1)	20% <u>2.3</u> <u>(1.1-4.3)</u>	12% 1.0 (0.4-2.5)	21% 1.9 (0.7-5.4)	15%	Univariate 0.07 Multivariate 0.44

¹ = Test of the hypothesis: of no difference between office-types, the first p-value is without consideration of confounders, the second is with age, gender, job rank and market division in a multivariate analysis. p<0.05 in underlined and bold text.

ARCHITECTURE & OFFICE DESIGN

STUDY 1: OFFICE TYPE'S INFLUENCE ON HEALTH STATUS & JOB SATISFACTION

13

RESULTS Table 4. Emotional Health and Quality of Sleep Among 469 Office workers

Outcome EMOTIONAL HEALTH	Cell-office (Ref.) n=131	Shared- Room n=26	Small open-plan n=43	Med. open-plan n=56	Large open-plan n=75	Act.based flex-office n=81	Act.based combi-office n=57	TOTAL n=469	P-value for Office type ¹
LESS: Efficiency	15% 1.0	19% 1.0 (0.3-3.4)	37% <u>2.7</u> <u>(1.6-7.2)</u>	34% <u>2.1</u> <u>(1.1-3.8)</u>	23% 1.3 (0.6-2.8)	24% 1.2 (0.6-2.8)	23% 1.0 (0.4-2.8)	23%	Univariate <u>0.006</u> Multivariate <u>0.02</u>
Accuracy	7% 1.0	23% 2.6 (0.7-9.3)	30% <u>4.0</u> <u>(1.6-9.9)</u>	27% <u>3.3</u> <u>(1.4-7.9)</u>	20% 2.5 (0.8-7.8)	16% 1.4 (0.7-3.0)	26% 2.4 (0.6-7.4)	18%	Univariate 0.43 Multivariate 0.54
Calm & harmony	40% 1.0	54% 1.3 (0.7-2.3)	58% 1.6 (0.8-3.2)	64% <u>2.1</u> <u>(1.2-3.8)</u>	51% 1.4 (0.6-2.4)	46% 0.9 (0.6-1.4)	56% 1.3 (0.6-2.9)	50%	Univariate <u>0.018</u> Multivariate 0.20
Energy	56% 1.0	65% 1.0 (0.4-2.5)	72% 1.7 (0.6-3.6)	73% 1.7 (1.0-2.9)	65% 1.3 (0.7-2.3)	60% 0.8 (0.5-1.5)	70% 1.2 (0.4-4.1)	64%	Univariate <u>0.018</u> Multivariate 0.20
Sleep quality	18% 1.0	31% 1.5 (0.7-3.1)	37% <u>1.7</u> <u>(0.9-3.3)</u>	30% 1.1 (0.6-1.9)	31% <u>1.3</u> <u>(0.7-2.5)</u>	25% 0.9 (0.5-1.5)	30% 1.2 (0.6-2.7)	27%	Univariate <u>0.018</u> Multivariate 0.20
MORE: Sad & depressed	28% 1.0	31% 1.1 (0.5-2.5)	13% <u>1.3</u> <u>(0.7-2.7)</u>	30% 1.1 <u>(1.1-4.8)</u>	43% <u>2.1</u> <u>(1.1-3.3)</u>	30% 1.0 (0.6-1.8)	37% 1.6 (0.7-3.8)	35%	Univariate 0.13 Multivariate 0.26

Note: The table shows the percentage of subjects with self-reported outcome in each office type and odds ratios (ORs), with 95% confidence intervals (CI) in parenthesis. Cell-office was used as reference category, and ORs were calculated in a multivariate logistic regression analysis, after adjustment for age, gender, job rank, and line of business. Statistical significances are marked with underlined and bold text. ¹ = Test of the hypothesis of no difference between office types. The first p-value is without consideration of confounders; the second is after adjustment for age, gender, job rank, and line of business. P-Value <0.05 are marked in bold. Negative outcome on aspects of emotional health during the previous 4 weeks.

STUDY 1: OFFICE TYPE'S INFLUENCE ON HEALTH STATUS & JOB SATISFACTION

14

RESULTS Table 5. Psychosocial Work Environment and Opinion about Work Among 469 Office workers

Outcome JOB SATISFACTION	Cell-office (Ref.) n=131	Shared- Room n=26	Small open-plan n=43	Med. open-plan n=56	Large open-plan n=75	Act.based flex-office n=81	Act.based combi-office n=57	TOTAL n=469	P-value for Office type ¹
PSYCH. SOCIAL WORK ENVIRONMENT:									
Work demands	23% 1.0	27% 1.5 (0.6-3.5)	26% 1.1 (0.4-2.6)	29% 1.3 (0.6-3.1)	27% 1.2 (0.5-2.5)	32% 1.3 (0.6-2.6)	32% 1.2 (0.6-2.5)	27%	Univariate 0.83 Multivariate 0.99
Leadership	28% 1.0	19% 0.6 (0.2-1.9)	49% <u>2.7</u> <u>(1.4-5.2)</u>	34% 1.4 (0.8-2.2)	38% <u>1.7</u> <u>(1.0-2.9)</u>	38% 1.7 (1.0-2.9)	47% <u>2.4</u> <u>(0.5-1.1)</u>	33%	Univariate <u>0.007</u> Multivariate <u>0.01</u>
Corporation	11% 1.0	8% 0.7 (0.2-2.4)	14% 1.5 (0.5-4.2)	23% <u>2.4</u> <u>(1.0-5.8)</u>	10% 0.9 (0.3-3.0)	10% 0.9 (0.5-1.7)	7% 0.6 (0.2-1.7)	12%	Univariate 0.017 Multivariate 0.27
ATTITUDE TO WORK ITSELF:									
Goals at work	28% 1.0	46% 2.0 (0.7-5.3)	42% 1.5 (0.9-2.5)	39% 1.4 (0.8-2.7)	45% 1.8 (1.0-3.3)	27% 0.9 (0.6-1.6)	47% <u>2.4</u> <u>(1.1-5.9)</u>	36%	Univariate <u>0.036</u> Multivariate 0.18
Satisfaction work itself	17% 1.0	23% 1.4 (0.5-4.1)	33% <u>2.3</u> <u>(0.8-6.7)</u>	34% <u>2.5</u> <u>(1.0-5.9)</u>	22% 1.2 (0.6-2.7)	20% 1.3 (0.7-2.4)	33% 2.4 (0.8-7.1)	24%	Univariate 0.057 Multivariate 0.19

Note: The table shows the percentage of subjects with self-reported outcome in each office type and odds ratios (ORs), with 95% confidence intervals (CI) in parenthesis. Cell-office was used as reference category, and ORs were calculated in a multivariate logistic regression analysis, after adjustment for age, gender, job rank, and line of business. Statistical significances are marked with underlined and bold text. ¹ = Test of the hypothesis of no difference between office types. The first p-value is without consideration of confounders; the second is after adjustment for age, gender, job rank, and line of business. P-Value <0.05 are marked in bold. Negative outcome on aspects of emotional health during the previous 4 weeks.

GRAPHIC OVERVIEW: Table 7. Distribution of Low and High Risks With Regard to Inferior Health & Less Job Satisfaction in Different office types

15

Outcome: HEALTH & JOB SATISFACTION	Cell-office (Ref.)	Shared-room	Small open-plan	Med. open-plan	Large open-plan	Act.based flex-office	Act. based combi-office
HEALTH							
Any sick leave (1-365 days/year)					○	○	●
Sick leave more 7 days/year			○	●	●		
General health	○	●	●	●			
Physical & psychological health	○		●		●	○	
EMOTIONAL HEALTH							
Efficiency	○	○	●	●			○
Accuracy	○		●	●			
Calm & harmony				●		○	
Energy			●	●		○	
Sad & depressed							
Quality of Sleep	○			●	●	○	
JOB SATISFACTION							
Work demands ¹							
Leadership		○	●		●	○	●
Cooperation		○		●			○
Goals at work						○	●
Satisfaction	○			●			●

Note: The table presents a synthesis based on estimated Odds Ratios (OR:S) in the multivariate analyses. ○= low risk. ●= high risk. * = Too small variation to be considered

STUDY 2: OFFICE TYPE'S INFLUENCE ON PERCEPTION OF LEADERSHIP

16

BASED ON:

- Sample: 5, 358 persons working in 7 identified office types
- SLOSH 2010 (Swedish Longitudinell Occupational Study)
- National representative long-term study on health & work environment collected every 2nd year in Sweden since 2006
- Statistical method: multivariate regression analysis divided by gender
(Controlled for: age, sex, job rank, labour market – private/public)



Journal of Corporate Real Estate
Vol. 15 No. 3/4, 2013
pp. 158-212
© Emerald Group Publishing Limited
1463-0455
DOI: 10.1108/JCRE-03-2013-0008

Is perception of
of leadership
influenced by
office environment?

Journal of
Corporate Real
Estate (JCRE)
(2013)

1) GLOBE – Index (15 questions) covers 5 different areas

17

Response scale ranges from 1–5

Following traits of the manager was measured:

- a) *Integrity in leadership*
- b) *Autocratic leadership*
- c) *Self-centered leadership*
- d) *Team integrator*
- e) *Inspirational leadership*

2) MODERN WORKING LIFE (Nya arbetslivet, NA) (Oxenstierna et al., 2008; Theorell et al., 2012)

Based on 2 questions. Response scale ranges from 1–4

- a) *"Care your manager about you?"*
- b) *"Does your manager listen to you and take in what you say?"*

3) LEADERSHIP CLIMATE (From stress profile questionnaire) (Setterind & Larsson, 1995)

Based on 10 statements. Response scale ranges from 1–4

Examples of statements:

- a) *"I get the information I need from my boss"*
- b) *"My immediate supervisor has a good driving force and is good at implementing changes"*
- c) *"My immediate supervisor 's explains the goals of our organization so that I understand what it means for my work"*
- d) *"I know what my supervisor is expected of me"*
- e) *"My immediate boss shows that he/ she cares about how I feel"*
- f) *"I have sufficient powers in relation to the responsibility I have"*

GRAPHIC OVERVIEW OF RESULTS: Table 4. Differences in Perception of Managerial Leadership between office types

18

Outcome PERCEPTION OF LEADERSHIP	Cell- office (Ref.) n=131	Shared- Room n=26	Small open-plan n=43	Med. open-plan n=56	Large open-plan n=75	Act.based flex-office n=81	Act. based combi-office n=57
GLOBE							
Total sample		●		○			
Men		■		□		■	
Women				◇			
MODERN WORKING LIFE							
Total sample		● ●		○		● ●	
Men		■ ■	□			■	
Women			◆ ◆				
LEADERSHIP/ STRESS PROFILE							
Total sample		■		○			
Men				□			
Women			◆	◇			
Note: Total sample and split by sex; synthesis is based on multivariate regression analyses adjusted for age, sex, job rank and labour market sector; cell-office was used as reference category. Highest and lowest significant values are shown; when the highest and lowest reported value is non-significant, it is reported.							

STUDY 3: OFFICE TYPE'S INFLUENCE ON SATISFACTION WITH WORKSPACE CONTRIBUTION (JOB SATISFACTION, COMFORT & PERFORMANCE)

19

BASED ON

- **Sample:** 4, 352 persons working in 7 office designs
(6 identified office types, 1 subcategory of the office type flex office – hot-desking office)
- **SLOSH 2012** (Swedish Longitudinell Occupational Study)
- **National representative long-term study on health & work environment** collected every 2nd year in Sweden since 2006
- **Statistical method:**
 - a) **Multivariate regression analysis** divided by gender (Controlled for: age, educational level)
 - b) **Correlation analysis** btw access of supportive facilities – satisfaction with workspace contribution

Office Employees' Perception of Workspace Contribution: A Gender and Office Design Perspective

Environment and Behavior
2019, Vol. 5(3), 195–224
© The Author(s) 2018
Article reuse guidelines:
sagepub.com/journalsPermissions
DOI: 10.1177/001316441879144
journals.sagepub.com/home/ebh



Environment
& Behavior
(2019)

ARCHITECTURE & OFFICE DESIGN

GRAPHIC OVERVIEW OF RESULTS: Table 5. Satisfaction with Workspace Contribution & with Access to Supportive Facilities

20

Outcome CONTRIBUTION TO:	Cell-office (Ref.)	Shared-room	Small open-plan	Med. open-plan	Large open-plan	Act. based combi-office	Hot-desking
JOB SATISFACTION							
Men		•	••		•		•••
Women		•••				•••	•••
PLEASANTNESS							
Men			•				•••
Women						•	•••
TO DO A GOOD JOB							
Men		•••	•••		•••		•••
Women		••			•	••	•••
ACCESS TO SUPP. FACILITIES:							
ROOMS FOR CONC. WORK							
Men			•				•
Women						•	•••
SPACES - SPONT. MEETINGS							
Men							•
Women						••	•••
SPACES - BOOKED MEETINGS							
Men		•••	•••				•••
Women			•••			••	•••

Note: Synthesis is based on linear multivariate analysis adjusted for age and education.

CORRELATION:

Table 4. Correlations Between the Domains of (a) Satisfaction With the Contribution That the Workspace Makes and (b) Access to Supportive Facilities.

21

OUTCOME	1	2	3	4	5	6
A) WORKSPACE CONTRIBUTION						
Contribution to:						
1. Job satisfaction	–					
2. Pleasantness	0.86	–				
3. To do a good job	0.83	0.79	–			
B) ACCESS TO SUPPORTIVE FACILITIES						
Access to:						
1. Individual rooms for concentrated work	0.46	0.41	0.46	–		
2. Spaces for spontaneous meetings	0.38	0.35	0.37	0.58	–	
3. Spaces for booked meetings	0.31	0.31	0.31	0.45	0.71	–

Note. Sample $n=4,372$ participants. All correlations are highly significant ($p \leq .001$). Degree of correlation between variables with.

= lowest degree of correlation (0.31-0.46)
 = middle degree of correlation (0.45-0.71)
 = highest degree of correlation (0.79-0.86)

ARCHITECTURE & OFFICE DESIGN

CONCLUSIONS

22

- What needs should be satisfied in order to create a "good" work environment at the office?



Selgas Cano Architects, Madrid (architect: Selgas Cano)

* Good work environment = an office environment that has a positive influence on individual employee-level & organizational level

ARCHITECTURE & OFFICE DESIGN

FOCUSED ON HEALTH, PLEASANTNESS & PERFORMANCE...

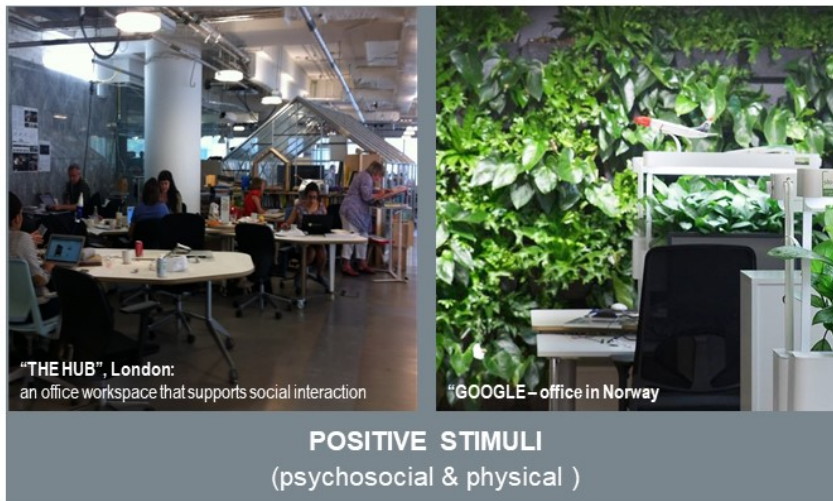
23



ARCHITECTURE & OFFICE DESIGN

HEALTH, PLEASANTNESS & PERFORMANCE IS ALSO SUPPORTED BY...

24



ARCHITECTURE & OFFICE DESIGN



THANK YOU - TACK

Dr Christina Bodin Danielsson/ Associate professor in Architecture, Master of Architecture SAR/MSA
ARCHITECTURE & OFFICE DESIGN

Presentation by Dr Annu HAAPAKANGAS

OPEN SPACES AT EU INSTITUTIONS VERSUS TRADITIONAL WORKSPACES: JUSTIFICATION, EVOLUTION, EVALUATION AND RESULTS

Annu Haapakangas, PhD, Specialist Researcher, Finnish Institute of Occupational Health



AIM AND KEY POINTS

2

The purpose of this presentation is to describe and explain how different office types, particularly modern open space offices, impact employee satisfaction, health, well-being, and productivity

The key points are:

1. Modern open office design (i.e., activity-based design) should not be confused with traditional open-plan offices – they differ in design, use, and employee outcomes
2. Activity-based offices can be as good as private offices, but differences between workplaces seem to be large
3. Attention should also be paid to specific elements of office design and change management, as this may be more informative in explaining employee outcomes than the general office concept alone
4. More research is needed on the effects of modern office design on health and productivity, particularly in comparison to private offices

OPEN SPACES AT EU INSTITUTIONS VERSUS TRADITIONAL WORKSPACES: JUSTIFICATION, EVOLUTION, EVALUATION AND RESULTS

GENERAL REMARKS ON RESEARCH INTO OFFICE DESIGN IN RELATION TO EMPLOYEE OUTCOMES

3

- Differences between the most common **traditional office types** (open-plan offices, shared rooms, private rooms) have been well-documented over decades of research
- There is much less research on **modern open space offices** (i.e., activity-based office design)
 - The majority of evidence on activity-based offices comes from the Netherlands, Sweden, and, outside Europe, from Australia
- Overall, there is more research on employee satisfaction with different aspects of the office environment and less on the effects on health and well-being. **Medical studies** are rare.
- Differences between the public and private sector have not been a topic of research
- In terms of the **Covid-19 pandemic**, there is little research on offices. Different scenarios, mainly outside the scientific community, have been presented for post-crisis office development. E.g., increased remote working will likely impact office design while space-efficiency targets might need to be reconsidered.

OPEN SPACES AT EU INSTITUTIONS VERSUS TRADITIONAL WORKSPACES: JUSTIFICATION, EVOLUTION, EVALUATION AND RESULTS

TRADITIONAL OPEN-PLAN OFFICES VERSUS ACTIVITY-BASED OFFICES

4

- **Traditional open-plan offices** are associated with several negative outcomes for employees
 - Strong evidence of a dissatisfactory physical environment, particularly **noise and lack of privacy**
 - These are also likely causes of the decrease in productivity and health (through impaired cognitive performance, perceived lack of control, and psycho-physiological stress response)
 - Some evidence of decreased productivity and increased cognitive workload, decreased interaction and impaired social relations, decreased job satisfaction, increased stress and other complaints related to mental and physical health, increased risk of sickness absence and of disability retirement
- The existing data point to **improved work conditions in activity-based offices** compared with open-plan offices and shared office rooms.

OPEN SPACES AT EU INSTITUTIONS VERSUS TRADITIONAL WORKSPACES: JUSTIFICATION, EVOLUTION, EVALUATION AND RESULTS

ACTIVITY-BASED OFFICE DESIGN

5

- Essential differences between traditional open-plan and activity-based office design:
 1. Activity-based offices include **different types of workspaces**
 - E.g., for concentration, informal and formal interaction, speech privacy
 - Workspaces can be open, semi-open, and closed
 2. Workspace choice is flexible (i.e., in shared use, **no personal desks**)
- **Activity-based flexible offices (A-FOs)** include both characteristics.
 - Most of the research on activity-based offices concerns A-FOs but, in practice, activity-based features can be applied in offices in various ways
- Activity-based offices are closely related to '**new ways of working**', characterised by
 - increased freedom in the time and location of work (including, e.g., remote working)
 - reliance on advanced information and communications technology (ICT)
 - management style and work culture that support more flexible and autonomous working

OPEN SPACES AT EU INSTITUTIONS VERSUS TRADITIONAL WORKSPACES: JUSTIFICATION, EVOLUTION, EVALUATION AND RESULTS

TRADITIONAL PRIVATE OFFICES VERSUS ACTIVITY-BASED FLEXIBLE OFFICES

6

- Based on comparisons across large numbers of offices, **private offices and A-FOs do not appear to differ** in psychological stress, self-reported health, psychosocial environment, and job satisfaction.
 - **Contradictory findings** have been reported for satisfaction with the indoor climate, self-rated effects on productivity, interaction/social relations, and sickness absence
 - **Privacy and distractions** are an issue in many A-FOs although not to the same extent as in open-plan offices.
 - **Architecture and office design** are perceived more positively in A-FOs
- **Longitudinal studies** are rare for employees moving from private offices to an A-FO. They may, however, be more likely to experience some negative consequences.
- All in all, these findings imply **significant variation between workplaces and the need for more research** as many outcomes have been addressed by only one or two studies

OPEN SPACES AT EU INSTITUTIONS VERSUS TRADITIONAL WORKSPACES: JUSTIFICATION, EVOLUTION, EVALUATION AND RESULTS

ADVANTAGES AND DISADVANTAGES OF ACTIVITY-BASED FLEXIBLE OFFICES FOR HEALTH AND PRODUCTIVITY

7

- Frequent **workspace switching** is associated with higher satisfaction with the office environment and **higher self-rated productivity and well-being** although causal directions are uncertain
 - Through workspace choice, employees more likely maintain **task-supportive conditions** that increase satisfaction, productivity, and sense of well-being
 - Increasing the number of **breaks from prolonged sitting** is beneficial to various health outcomes. However, the average effects of moving into an A-FO on sitting behaviour are small and additional ergonomic interventions may be required.
- Most employees do not switch workspace actively which may counteract some of the potential benefits of A-FOs
- **Productivity and well-being may also decrease** if it is difficult or time-consuming to find or switch workspace
- **Lack of personal workstations** can negatively affect some aspects of **interaction** within teams due to difficulties in locating colleagues. Interactions across teams may increase.
- Overall, A-FOs are perceived to **support interaction and collaboration**, which contributes to both productivity and well-being at work

OPEN SPACES AT EU INSTITUTIONS VERSUS TRADITIONAL WORKSPACES: JUSTIFICATION, EVOLUTION, EVALUATION AND RESULTS

DIFFERENCES BETWEEN ACTIVITY-BASED FLEXIBLE OFFICES ARE SUBSTANTIAL

8

Satisfaction levels with A-FOs and, e.g., noise complaints in open offices vary substantially between workplaces

Critical factors for positive employee outcomes include:

- The provision and accessibility of **workspaces for quiet and uninterrupted work**
 - **Room acoustic design** that effectively decreases the intelligibility of background speech (e.g., WELL Building Standard v2)
 - Active and people-oriented **change management** and employee participation
 - **Technology (ICT), management style and work culture** that support flexible, paperless, and more mobile working
- Note.** Other factors (e.g., indoor climate, ergonomics, workspaces for interaction, general ambience) are also important for employee outcomes but they are less likely to be an issue.

OPEN SPACES AT EU INSTITUTIONS VERSUS TRADITIONAL WORKSPACES: JUSTIFICATION, EVOLUTION, EVALUATION AND RESULTS

REFERENCES

9

- Appel-Meulenbroek, R., Groenen, P., & Janssen, I. (2011). An end-user's perspective on activity-based office concepts. *Journal of Corporate Real Estate*, 13(2), 122-135.
- Arundell, L., Sudholz, B., Teychenne, M., Salmon, J., Hayward, B., Healy, G. N., & Timperio, A. (2018). The impact of activity based working (ABW) on workplace activity, eating behaviours, productivity, and satisfaction. *International Journal of Environmental Research and Public Health*, 15, 1005.
- Benatti, F. B., & Ried-Larsen, M. (2015). The effects of breaking up prolonged sitting time: a review of experimental studies. *Medicine and Science in Sports and Exercise*, 47(10), 2053-61.
- Bergsten, E., Haapakangas, A., Larsson, J., Jahncke, H., & Hallman, D. M. Effects of relocation to activity-based workplaces on perceived productivity: Importance of change-oriented leadership. Manuscript submitted for publication.
- Bergström, J., Miller, M., & Horneij, E. (2015). Work environment perceptions following relocation to open-plan offices: A twelve-month longitudinal study. *Work*, 50(2), 221-228.
- Bernstein, E. S., & Turban, S. (2018). The impact of the 'open' workspace on human collaboration. *Phil. Trans. R. Soc. B* 373: 20170239. <http://dx.doi.org/10.1098/rstb.2017.0239>
- Blok, M. M., Groenesteijn, L., Schelvis, R., & Vink, P. (2012). New ways of working: Does flexibility in time and location of work change work behavior and affect business outcomes? *Work*, 41(Supplement 1), 2605-2610.
- Danielsson, C., & Bodin, L. (2008). Office type in relation to health, well-being, and job satisfaction among employees. *Environment and Behavior*, 40(5), 636-668.
- Bodin Danielsson, C., & Bodin, L. (2009). Difference in satisfaction with office environment among employees in different office types. *Journal of Architectural and Planning Research*, 26(3), 241-257.
- Bodin Danielsson, C., Bodin, L., Wulff, C., & Theorell, T. (2015). The relation between office type and workplace conflict: A gender and noise perspective. *Journal of Environmental Psychology*, 42, 161-171.
- Bodin Danielsson, C., Chungkham, H. S., Wulff, C., & Westerlund, H. (2014). Office design's impact on sick leave rates. *Ergonomics*, 57(2), 139-147.
- Brunia, S., De Been, I., & van der Voordt, T. J. (2016). Accommodating new ways of working: lessons from best practices and worst cases. *Journal of Corporate Real Estate*, 18(1), 30-47.
- Candido, C., Thomas, L., Haddad, S., Zhang, F., Mackey, M., & Ye, W. (2019). Designing activity-based workspaces: satisfaction, productivity and physical activity. *Building Research & Information*, 47(3), 275-289.
- Candido, C., Zhang, J., Kim, J., de Dear, R., Thomas, L. E., Strapasson, P., & Joki, C. (2016). Impact of workspace layout on occupant satisfaction, perceived health and productivity. In *Proceeding of the 9th Windsor Conference: Making Comfort Relevant*, Windsor, United Kingdom, 7-10 April 2016.

OPEN SPACES AT EU INSTITUTIONS VERSUS TRADITIONAL WORKSPACES: JUSTIFICATION, EVOLUTION, EVALUATION AND RESULTS

10

- Chastin, S. F., Egerton, T., Leask, C., & Stamatakis, E. (2015). Meta-analysis of the relationship between breaks in sedentary behavior and cardiometabolic health. *Obesity*, 23(9), 1800-1810.
- De Been, I., & Beijer, M. (2014). The influence of office type on satisfaction and perceived productivity support. *Journal of Facilities Management*, 12(2), 142-157.
- De Croon, E., Sluiter, J., Kuijer, P. P., & Frings-Dresen, M. (2005). The effect of office concepts on worker health and performance: A systematic review of the literature. *Ergonomics*, 48(2), 119-134.
- Engelen, L., Chau, J., Young, S., Mackey, M., Jayapalan, D., & Bauman, A. (2018). Is activity-based working impacting health, work performance and perceptions? A systematic review. *Building Research & Information*, 47, 1-12.
- Gerdenitsch, C., Korunka, C., & Hertel, G. (2018). Need-Supply Fit in an Activity-Based Flexible Office: A Longitudinal Study During Relocation. *Environment and Behavior*, 50(3), 273-297.
- Haapakangas, A., Hallman, D. M., Mathiassen, S. E., Jahncke, H. (2018). Self-rated productivity and employee well-being in activity-based offices—The role of environmental perceptions and workspace use. *Building and Environment*, 145, 115-124.
- Haapakangas, A., Hallman, D. M., Mathiassen, S. E., & Jahncke, H. (2019). The effects of moving into an activity-based office on communication, social relations and work demands—A controlled intervention with repeated follow-up. *Journal of Environmental Psychology*, 66, 101341.
- Haapakangas, A., Hongisto, V., Eerola, M., & Kuusisto, T. (2017). Distraction distance and perceived disturbance by noise — An analysis of 21 open-plan offices. *The Journal of the Acoustical Society of America*, 141(1), 127-136.
- Haapakangas, A., Hongisto, V., Varjo, J., & Lahtinen, M. (2018). Benefits of quiet workspaces in open-plan offices – Evidence from two office relocations. *Journal of Environmental Psychology*, 56, 63-75.
- Hallman, D. M., Mathiassen, S. E., & Jahncke, H. (2018). Sitting patterns after relocation to activity-based offices: A controlled study of a natural intervention. *Preventive medicine*, 111, 384-90.
- Herbig, B., Schneider, A., & Nowak, D. (2016). Does office space occupation matter? The role of the number of persons per enclosed office space, psychosocial work characteristics, and environmental satisfaction in the physical and mental health of employees. *Indoor Air*, 26(5), 755-767.
- Hoendervanger, J. G., De Been, I., Van Yperen, N. W., Mobach, M. P., & Albers, C. J. (2016). Flexibility in use: Switching behaviour and satisfaction in activity-based work environments. *Journal of Corporate Real Estate*, 18(1), 48-62.
- Hoendervanger, J. G., Van Yperen, N. W., Mobach, M. P., & Albers, C. J. (2019). Perceived fit in activity-based work environments and its impact on satisfaction and performance. *Journal of Environmental Psychology*, 65, 101339.

OPEN SPACES AT EU INSTITUTIONS VERSUS TRADITIONAL WORKSPACES: JUSTIFICATION, EVOLUTION, EVALUATION AND RESULTS

- Kim, J., Candido, C., Thomas, L., & de Dear, R. (2016). Desk ownership in the workplace: The effect of non-territorial working on employee workplace satisfaction, perceived productivity and health. *Building and Environment*, 103, 203-214.
- Kim, J., & de Dear, R. (2013). Workspace satisfaction: The privacy-communication trade-off in open-plan offices. *Journal of Environmental Psychology*, 36, 18-26.
- Lahtinen, M., Ruohomäki, V., Haapakangas, A., & Reijula, K. (2015). Developmental needs of workplace design practices. *Intelligent Buildings International*, 7(4), 198-214.
- Meijer, E. M., Frings-Dresen, M. H., & Sluiter, J. K. (2009). Effects of office innovation on office workers' health and performance. *Ergonomics*, 52(9), 1027-1038.
- Nielsen, M. B., & Knardahl, S. (2020). The impact of office design on medically certified sickness absence. *Scandinavian Journal of Work, Environment & Health*, 46(3), 330-334.
- Nielsen, M. B., Emberland, J. S., & Knardahl, S. (2020). Office design as a risk factor for disability retirement: A prospective registry study of Norwegian employees. *Scandinavian Journal of Work, Environment and Health*. doi: 10.5271/sjweh.3907
- Otterbring, T., Pareigis, J., Wästlund, E., Makrygiannis, A., & Lindstrom, A. (2018). The relationship between office type and job satisfaction: Testing a multiple mediation model through ease of interaction and well-being. *Scandinavian Journal of Work, Environment and Health*, 44(3), 330-334.
- Parry, S., & Straker, L. (2013). The contribution of office work to sedentary behaviour associated risk. *BMC Public Health*, 13, 296.
- Pejtersen, J., Allermann, L., Kristensen, T. S., & Poulsen, O. M. (2006). Indoor climate, psychosocial work environment and symptoms in open-plan offices. *Indoor Air*, 16(5), 392-401.
- Pejtersen, J. H., Feveile, H., Christensen, K. B., & Burr, H. (2011). Sickness absence associated with shared and open-plan offices—a national cross-sectional questionnaire survey. *Scandinavian Journal of Work, Environment & Health*, 376-382.
- Richardson, A., Potter, J., Paterson, M., Harding, T., Tyler-Merrick, G., Kirk, R., Reid, K., & McChesney, J. (2017). Office design and health: a systematic review. *New Zealand Medical Journal*, 130(1467), 39.
- Seddigh, A., Berntson, E., Bodin Danielson, C., & Westerlund, H. (2014). Concentration requirements modify the effect of office type on indicators of health and performance. *Journal of Environmental Psychology*, 38, 167-174.
- van der Voordt, T. J. M. (2004). Productivity and employee satisfaction in flexible workplaces. *Journal of Corporate Real Estate*, 6(2), 133-148.

OPEN SPACES AT EU INSTITUTIONS VERSUS TRADITIONAL WORKSPACES: JUSTIFICATION, EVOLUTION, EVALUATION AND RESULTS

- Wahlström, V., Fjellman-Wiklund, A., Harder, M., Slunga Järholm, L., & Eskilsson, T. (2020). Implementing a Physical Activity Promoting Program in a Flex-Office: A Process Evaluation with a Mixed Methods Design. *International Journal of Environmental Research and Public Health*, 17(1), 23.
- Wijk, K., Bergsten, E. L., & Hallman, D. M. (2020). Sense of Coherence, Health, Well-Being, and Work Satisfaction before and after Implementing Activity-Based Workplaces. *International Journal of Environmental Research and Public Health*, 17(14), 5250.
- Wohlers, C., Hartner-Tiefenthaler, M., & Hertel, G. (2019). The relation between activity-based work environments and office workers' job attitudes and vitality. *Environment and Behavior*, 51(2), 167-198.
- Wohlers, C., & Hertel, G. (2017). Choosing where to work at work—towards a theoretical model of benefits and risks of activity-based flexible offices. *Ergonomics*, 60(4), 467-486.

OPEN SPACES AT EU INSTITUTIONS VERSUS TRADITIONAL WORKSPACES: JUSTIFICATION, EVOLUTION, EVALUATION AND RESULTS

Presentation by Jessica MARTINEZ ALONSO



Open Space at the Court



Jessica MARTÍNEZ ALONSO
Staff Committee member - European Court of Justice

1



Open space – the beginning

- 2013 : move to the towers and from « normal » offices to open space for the IT directorate, some unit of the infrastructure and security directorate
 - *Lack of friendliness*
 - *Improve the communication*
 - *Misuse of space*
- 2015: my arrival at the Court and ascertainment that my colleagues are not pleased to be working in *dynamic offices "fitted out in the form of boxes and collective landscaped offices"*
 - *Noise, privacy*
 - *Meeting spaces are open space too*
 - *Decision made without the staff's input*
 - *But « luxurious » open spaces with half-closed offices (even if quite small)*

2



The survey (April 2017)

- Questions revolved around two elements: working conditions and quality of life
- Answer rate: 70%
- Acoustic comfort: 89% less comfortable than in closed offices
- Concentration: 87% find it harder to concentrate in open spaces. Not only because of the noise but also the noise of colleagues coming and going through the floor.
- Efficiency: 57% less efficient
- Productivity: 58% less productive
- Feeling lack of confidentiality: 61%

3



Time management: Carlson's law

- *all interrupted work will be less effective and will take more time than if it was completed in a continuous manner.*
- **11 minutes**
 - While working we are interrupted on average every 11 minutes.
- **23 minutes**
 - When we are interrupted, it takes up to 23 minutes for us to return to a state of "flux" in which our level of concentration is at its peak.

4



Are open space a good ROI ?



R.O.I: Return on Investment



After the survey

- April 2017: survey
- June 2017: results of the survey => staff and Administration
- January 2018: Report to the Administration with all the details of the survey
- April 2018: creation of task force *Working environment*
 - **Goals** : survey analysis, visit other open spaces and share experiences (EIB, Court of Auditors), find solutions and include them in the current budget
 - **Conclusions (04/2019)**: lack of confidentiality, concentration, privacy, comfort in terms of temperature, acoustics and lighting, associated with the simple fact of sharing a space (seem to have an inevitable negative impact on staff satisfaction. The latter tends to translate into reduced efficiency.)
 - The departments concerned therefore favour a return to individual offices, not without arranging the spaces so that they better correspond to today's needs
- End 2019: IT director's survey and, as a result, conversion of open spaces into normal individual offices as from November 2019.

6

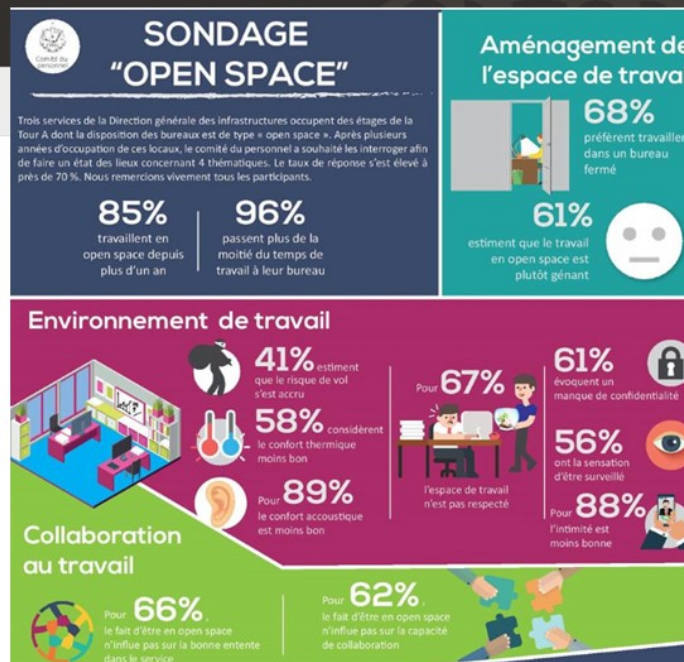


Questions?

Thank you for your attention



7



8

Presentation by José María CARRASCOSA MORENO

Open Spaces Workshop European Court of Auditors

European Parliament Committee on Budgetary Control
29 October 2020

Jose Carrascosa

Principal Manager - Information, Workplace and Innovation
European Court of Auditors



EUROPEAN
COURT
OF AUDITORS

ECA Workplace - Principles

- ECA owns its buildings
- Accommodate all staff on a single site
- A tradition of austerity and efficient use of budget
- An attractive place to work, secured and well-being oriented
- An innovative working environment, both physical and digital
- An environmentally friendly workplace



EUROPEAN
COURT
OF AUDITORS

Page 2

ECA Workplace - 3 Pillars

Facilities



- ☐ Single/double offices
- ☐ Team Zones
- ☐ Coffee corners / small kitchens
- ☐ Quiet rooms
- ☐ Small meeting rooms

Technologies



- ☐ Laptops for all
- ☐ Remote access
- ☐ Virtual meetings
- ☐ Advanced Collaboration
- ☐ Hybrid meetings

Policies



- ☐ Teleworking
- ☐ Flexible working time
- ☐ Environmental policy



EUROPEAN
COURT
OF AUDITORS

Page 3

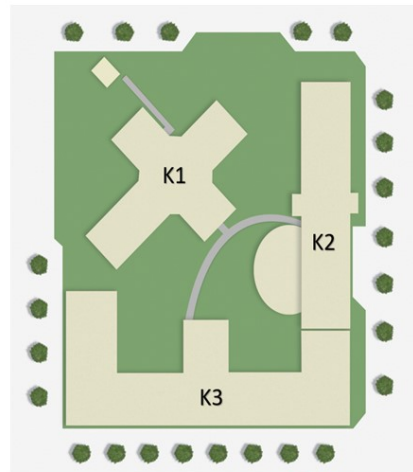
ECA Campus



EUROPEAN
COURT
OF AUDITORS

Page 4

ECA Campus



Page 5

ECA Campus - Summary

	K1 building	K2 building	K3 building
Year opened	1988	2003	2012
Workplaces	310	241	503
Levels	11	9	11
Basement	<ul style="list-style-type: none"> - 3 levels - 225 parking spaces - storage and technical facilities - archives, workshop - library 	<ul style="list-style-type: none"> - 2 levels - 192 parking spaces - storage and technical facilities 	<ul style="list-style-type: none"> - 2 levels - 165 parking spaces - storage and technical facilities, workshops, print shop - kitchen and archives
Floors	<ul style="list-style-type: none"> - Ground floor: main entrance hall and offices - Six floors of office space, including cabinets and Court meeting room - 7th floor: technical rooms 	<ul style="list-style-type: none"> - Ground floor: entrance hall, cafeteria, offices and conference room with 22 interpretation booths - 5 floors of offices, 6 meeting rooms and a videoconference room - 6th floor: technical rooms 	<ul style="list-style-type: none"> - Ground floor: entrance hall, canteen, cafeteria and training centre - 5 floors of offices, innovation room, team areas and a data centre - 6th floor: lounge, reception rooms with kitchen and technical facilities

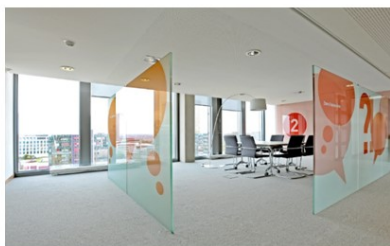
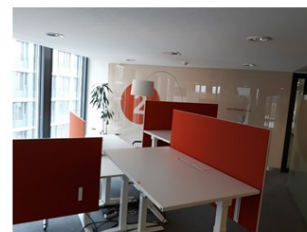
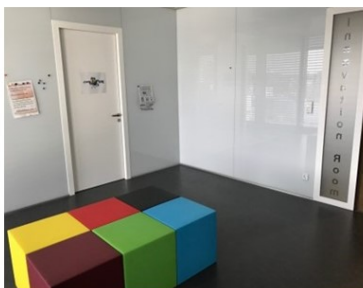


Page 6

ECA Campus - Surface

Building	Gross floor area (m ²)	Net floor area (m ²)	Office area (m ²)	Open Spaces (m ²)
K1	26 051.0	13 565.2	7 391.9	688.4
K2	21 562.0	10 324.7	5 368.8	0
K3	33 877.0	17 335.5	10 039.7	0
IT disaster-recovery centre	38.5	38.5	0	0
Total	81 528.5	41 263.9	22 800.4	688.4

New spaces in K3 building - 2012

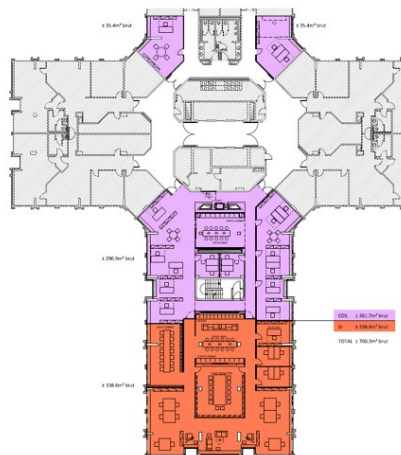


New spaces in K3 building - 2012

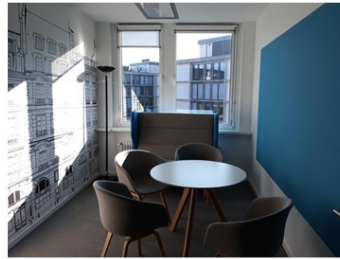
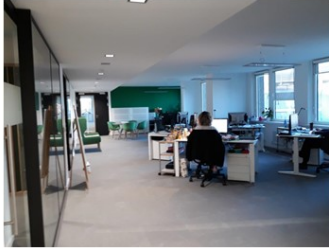


“Nouvel Environnement de Travail” in K1 building - 2016

- Pilot for the Corporate Communication teams and Legal Service
- Based on K3 building experience, introduce modern workplace concepts like kitchen corners, small discussion rooms, ...
- Learn and apply those concepts in future projects like K2 building renewal



“Nouvel Environnement de Travail” in K1 building - 2016



Page 11

ECA Workplace - Evolutions

- Renewal of K2 building 2020-2022
- Progressive renewal of Private Offices
- Individual offices are kept, but digital work facilitates the creation of different collaborative spaces due to the elimination of paper archives



Page 12

ECA Workplace - After COVID

- **In the long term, we will not work in the same way**
 - A dual working environment “office/home”
 - Interactions will be different
 - Individual offices will continue but will be less occupied
 - Increase need of spaces for being together
 - Hybrid meetings
 - We will have to adapt to the new conditions
 - Digitalisation push
 - A different management : objectives setting, control of tasks, time recording...



DE NOUVEAU ENSEMBLE
DANS NOS BÂTIMENTS
Nous comptons sur vous !

BACK
AT THE OFFICE TOGETHER
We're counting on you!

Q&A



Presentation by Marc BECQUET



Collaborative Spaces at the EC

M. Becquet

Head of Service - OIB

29/10/2020

Contents

- **Current situation of Offices and Housing**
- **Context**
 - Green Deal
 - Synergies & Efficiencies
 - New Ways of Working
 - Lessons Learnt from lockdown
 - Staff expectations
- **Conclusion: Next steps**



Current situation of Offices

Current situation of the EC in Brussels:

- 24.000 staff
- 785.000 m²
- More than 40 buildings

Note: European Commission offices only, i.e. excluding:

- Non EC (eg: EAAS, EAs, OLAF)
- Non offices (Nursery buildings, other)

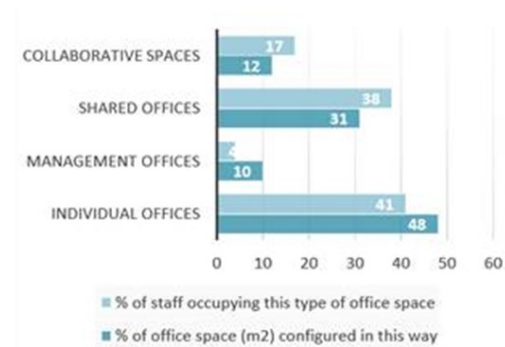


Current situation of Housing

Staff in Brussels housed in

- 17% collaborative spaces
- 38% shared offices (two or more)
- 46% individual & management offices

Note: figures roughly similar for Luxembourg

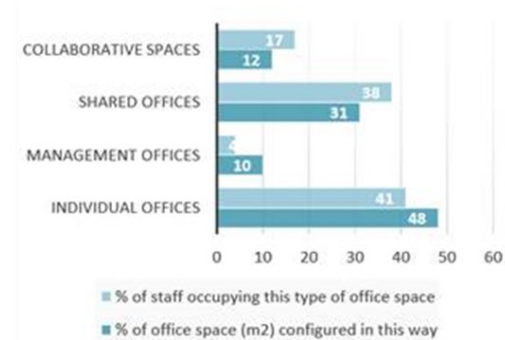


Current situation of Housing

Staff in Brussels housed in

- 17% collaborative spaces
- 38% shared offices (two or more)
- 46% individual & management offices

Note: figures roughly similar for Luxembourg



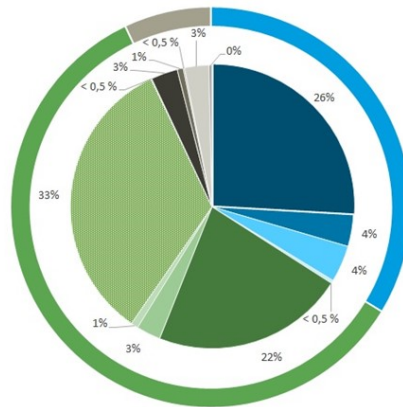
→ **More than 50% of staff is currently not in individual office**

Context : Green Deal

Make the Commission carbon neutral by 2030

→ **Decrease emissions**

Context : Green Deal – Source of EC emissions



Context: Green Deal

- Buildings account for 1/3 of EC emissions

➔ *Investigate paths to make each m² greener*



Context: Other (1)

- Synergies & Efficiencies
 - Planned Objective: 743.000 m² by 2027
 - Multi-annual Financial Framework
- New Ways of Working
 - (*Communication Workplace of the future*)
 - Increased telework
 - Available IT tools for remote collaboration



Context: Other (2)

- Lessons Learnt from lockdown
 - Remote working / Telework is possible beyond past levels
 - Need to define a "New Normal"
- Staff
 - Desire for increased telework
 - Covid related apprehensions (e.g.: shared offices)
 - Different working environment: Healthy, Social, Green...



Conclusion: Next steps

- Discussion underway to define “New Normal” in light of context
- Special focus on Green Deal
- Collaborative spaces is one element of that discussion
- Decision will be followed by proposal for implementation



Thank you



© European Union 2020

Unless otherwise noted the reuse of this presentation is authorised under the [CC BY 4.0](https://creativecommons.org/licenses/by/4.0/) license. For any use or reproduction of elements that are not owned by the EU, permission may need to be sought directly from the respective right holders.



NOTES

The Budgetary Control Committee (CONT) organised the workshop on 'Open spaces at EU institutions versus traditional work spaces: justification, evolution, evaluation and results' on 29 October 2020. This document consists of the proceedings of the workshop, the briefing on 'Open Plan Offices - The new ways of working', biographies of the speakers and the PowerPoint slides of the presentations.

DISCLAIMER

This document is addressed to the Members and staff of the European Parliament to assist them in their parliamentary work. The content of the document is the sole responsibility of its authors and should not be taken to represent an official position of the European Parliament.

Print ISBN 978-92-846-7514-2 | doi:10.2861/920667 | QA-03-20-820-EN-C
PDF ISBN 978-92-846-7513-5 | doi:10.2861/65836 | QA-03-20-820-EN-N