

# PLEASANT, PRODUCTIVE & POSSIBLE – THE FUTURE OF SUSTAINABLE WORK

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## Abstract

In the future ever more people will find work in the service economy. These professional services are traditionally offered from the office. Studies have clarified that a traditional way of working does not contribute to sustainable development. A different approach is necessary for better environmental performance of the offices themselves, yet also to comply with present-day needs.

Many activities presently performed at the central offices can be physically disconnected and executed at various places. New ways of working are based on detaching work activities from the office and blending them with other everyday life. There may be two basic approaches to establishing this: extrovert and introvert. Both approaches have common solutions but differ in the location of mixed space for working, living, leisure and amenities: distributed outside the office, in the city, or concentrated inside the office, which becomes a city of its own. Both directions will be exemplified in the paper.

A new way of working has decisive effects on the organisation, facility management and layout of offices. Assessments indicate significant improvement in terms of the use of space, building materials and energy, reduction of commuter travel, yet also to organisational efficiency, implying financial benefits.

Hence, office work can be more productive for the company, pleasant for the individual employee and sustainable to society. Being based on existing solutions, it is possible too. There are, of course, considerations related to this, which will be discussed in the paper.

**Keywords:** Office, work concept, travel, organisation, productivity, new economy

## 1. Introduction

As technologies for manufacture and transport of goods advance, in the future ever more people will find work in the service economy. This is visible already in America, South-East Asia and Western Europe. These professional services are traditionally offered from the office, the central office travelled to and from by employees and clients.

Case studies of various office buildings delivered at different moments in time (Dobbelsteen et al. 2004) demonstrated that there is a weak correlation between the year of construction or renovation and environmental performance. Since 1985, there has been hardly any environmental improvement of office buildings and the way they are used. The marginal improvement of buildings as a whole is a result of the autonomous development of technical utilities: building services have become more energy-efficient. The case studies suggested an

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environmental improvement factor of between 1.1 and 1.4, whereas a factor of 5 would have been necessary for the factor 20 required for sustainable development (Dobbelsteen 2004).

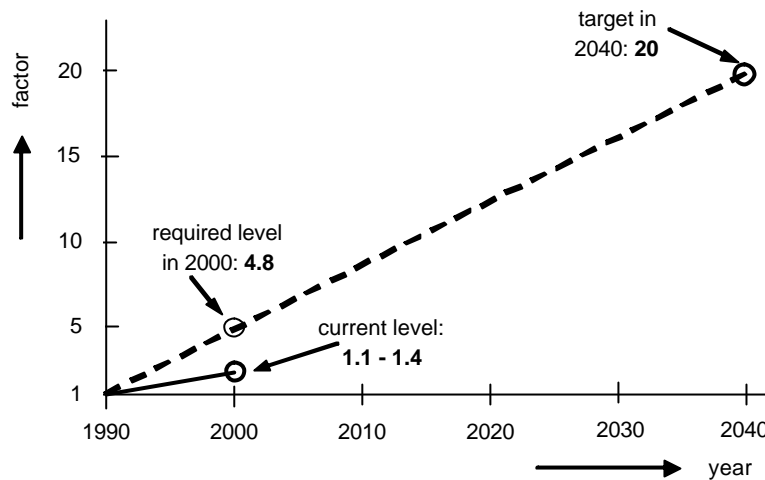


Figure 1 The arrears to factor 20 environmental improvement required for sustainability

The large gap between intentions and practice urges a swift shift towards effective measures. Effectiveness is the product of significance and improvement potential. Substantial environmental improvement of office accommodation is achieved only when aspects or components are addressed that contribute significantly to environmental damage, and/or elements are tackled that have a great improvement potential with regards to the environmental load. Apart from the impact on the environment, a different approach to office work can contribute to a more productive and pleasant environment for working and living.

## 2. Developments in working

### Freedom in time

Already in the 1980s, Toffler (1981) and Naisbett (1984) predicted that the necessity to build offices would not be long because computers would enable people to work anywhere they wanted. New information and telecommunication technologies indeed already make office employees work at a wide range of locations. The 24-hour city (Drucker 1992) becomes a reality: the world's business and information resources have become continuously available.

### Freedom of place

Mobile phones, portable computers and palmtops enable performance of office work in various urban work settings. For office real estate, space can already be purchased on demand, on an hourly, daily, or monthly basis. Informal types of work environments, such as airport lounges, first class trains, and Internet cafés provide flexible office space. When ICT-services in these spaces are combined with sophisticated peripheral technologies and meeting rooms and business catering are provided, new work environments evolve (Harrison 2002).

### Freedom of life

As a result of the developments in information and telecommunication technologies, office personnel work more independently and flexibly than before. This increased individual freedom of work enables the employee to structure their own time schedule, involving social responsibilities. The diversity of contacts during working hours has increased therefore, within and outside the organisation. The free labour conditions described offer better opportunities for free-lance activities, part-time jobs and shared functions.

### **Matrix living**

The distributed working leading to a blur of living, working and moving result in what is called *matrix living* (Harrison 2002): a co-existence of individual lifestyles that include multiple tasks and multiple locations across time.

## **3. Features of a more sustainable organisation of office work**

### **Dematerialisation**

When office work needs to become less environmentally damaging, one of the radical approaches is through absorbing office work in other activities, so that it requires no additional accommodation, saving space, building materials and energy. Therefore, they need to be physically detached from the central or another office. As various companies have already demonstrated, this is already possible. This process could be called dematerialisation of office accommodation.

Another form is dematerialisation of information: the digitalisation of office functions, making paper, reports, books, and physical archives redundant. The combination of both forms of dematerialisation will achieve the best results for sustainability but the success depends on the quality and functionality of the digital services.

### **Functions executed outside the central office**

A structural approach to sustainable office work should start with a critical view on which office tasks can be distributed or solved differently than by means of allocation at the central office. The core of office work is processing of information (Vos et al. 2001), or more precisely: concentrating, archiving, producing, and communicating of information (Simons et al. 2002).

In the near future, concentrating and archiving of information can be executed anywhere, away from the office employee or even the central office. Concentration of digital information archives at the central office, this will hardly require any office space in the future.

Routine work, research, individual development of ideas, and the writing process of letters, e-mails and reports is a personal business that can be done at any place and any time. For the creative teamwork of design and collective development of ideas a physical disconnection however would be unpractical, expensive and ineffective. For companies mainly conducting this kind of work, a central office with an individual character will probably endure modern developments.

In many respects, office work may be communicated from a distance (literal telecommunication) but personal meetings offer additional qualities and advantages that will keep them necessary. Meeting facilities however can they be offered at transit nodes of roads, railways and airports, for use by different organisations.

The functions that not literally mean office work but make it possible – e.g. management, administration, issue of equipment, and technical support – may also operate on a telecontact basis but a central office will remain useful as an anchorplace of a company. The functions mentioned therefore may be allotted to this office, but it may be much smaller than at present. It may rather be the 'club space' of a company, comparable to the building of a sports club.

### **Variety of workplace accommodation**

A greater variety of workplaces is more likely to meet the requirements for effective living and working than a traditional office concept. Depending on the character of assignment and the scale required, workplaces can be accommodated differently, referring to the scale and assignment and accessibility (see figure 2). Shifting functions towards privileged and public

accessibility can reduce the use of space at the central office by a factor of 6 (Dobbelsteen 2004).

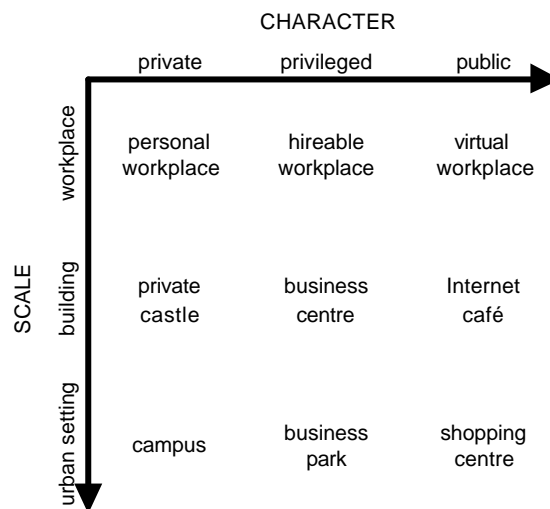


Figure 2 Workplace solutions for different assignment characters and scales

### Sophisticated personal contact

A big threshold for working footloose is related to the human need for personal contact with colleagues, in terms of social functions as well as managerial objectives of control and performance. Sophisticated ICT (e.g. see figure 3) improves eye-to-eye contact continuously, supporting the substitution of actual contact by what we call *telecontact*, personal contact at a distance.

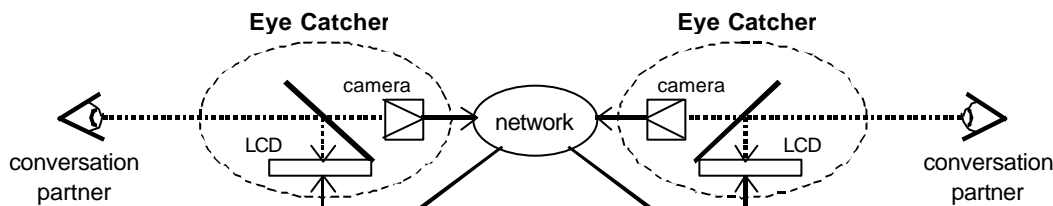


Figure 3 Technical principle of the Eye Catcher, developed by Exovision

### Shorter travelling distances

Last but not least: one of the most important environmental, economical and personal influences of new ways of working is related to the distance travelled to and from the central office and clients. Time, money and energy can be saved by distributed working.

## 4. Two images of a new approach

Based on the developments discussed above and assuming that a traditional way of working will not be the solution for a sustainable future – also in economic terms – two possible images can be drawn of future offices. Solutions for accommodation may be dispersed over the city (*"the city is the office"*) or located in one building or location (*"the office is the city"*) (Harrison 2002). The first could be considered an *extrovert* approach, the second one *introvert*. Both approaches share certain working principles.

### The extrovert approach

In the extrovert approach, many of the core activities of office work can be performed on a personal basis, anytime anywhere, depending on the employee's whereabouts and the space available. A basic place for personal work can be the *home office*. However, in some cases,

the office employee will need access to a place designed for office work, close to home, offering extra facilities and services. This non-existing type of office could be called the *district office*, which would be best integrated in, or situated close to, other district amenities or services: shopping centres, libraries, copy shops, and cafés. Furthermore, the office employee will make use of various places not specifically designed for office work, defined as *instant offices* (Vos et al. 1999).

For interactive work, the best place is at main intersections and nodes of infrastructure, in order to be optimally accessible by all transport means from all directions. These *business nodes* can be a pulsing dynamic centre for the new economy, combining office work with other work and optimal travel opportunities, and they should facilitate, for instance, meetings and presentations, project team sessions, production and reproduction, relaxation, sporting, dining, drinking, staying overnight, shopping, travelling, car care, and child care.

The central office remaining will still express the organisation's culture, values and beliefs, and needs to arouse the kind of employee dedication that sports clubs encounter from their members. It therefore could be called the *clubhouse office*. The size of the office can be significantly reduced: as with The Vision Web it may be comparable to an average downtown club. As a result of the size reduction, it can be located anywhere, best at attractive spots where it can be seen: in the city centre or at the business nodes previously introduced.

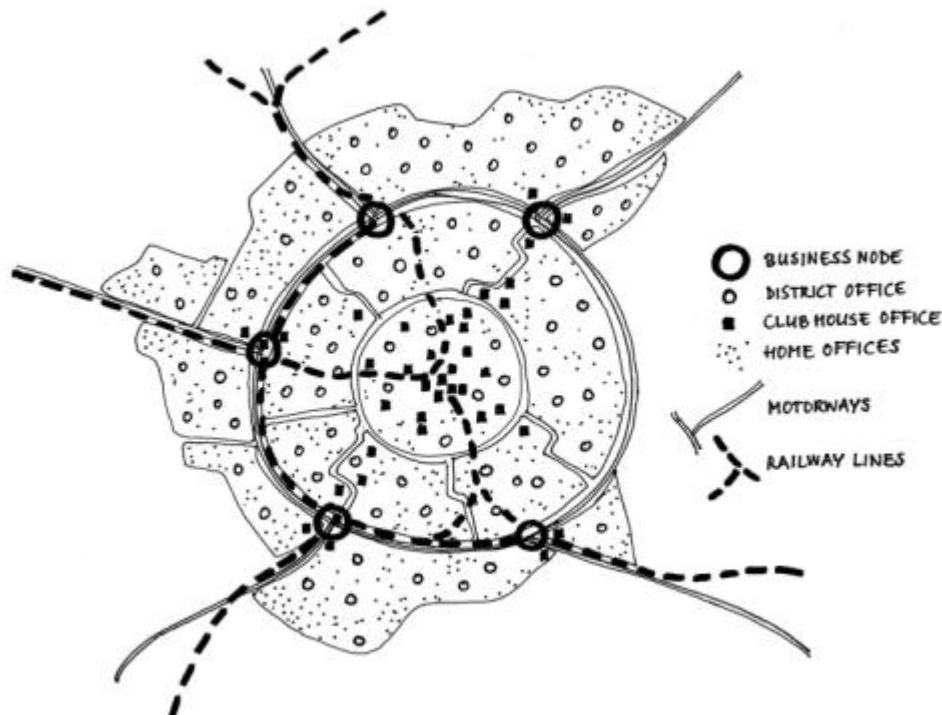


Figure 4 Sketch of a theoretical city plan adapted to the extrovert approach to work

In a society organised in a way as described above, cities would be planned differently: areas would be mixed instead of mono-functional; transport nodes would be the focal points of economic dynamics, and people would find opportunities to work anywhere in the city. This versatile urban society would substantially reduce the need for travel by car or even public transport: most workplaces would be accessible by foot or bicycle. Figure 4 is a theoretical depiction of such a city, with business nodes at the ring roads, district offices in every borough, and central clubhouse offices predominantly in the city centre.



*Figure 5 Main office of The Vision Web (left) with its main space, a grand café (right)*

There are no examples of this way of working on a large scale, but some companies already live to the principle. A Dutch example is The Vision Web, an IT management and consultancy company, whose 480 employees mainly work at home, in client's offices or 'on the road', in instant offices. The main office (figure 5) and three satellite offices are relatively small residential houses, with meeting facilities and only few non-personal workdesks.

### **The introvert approach**

In the introvert approach, variety of workplaces also exists, but instead of dissolving office work into other urban functions, urban functions are brought into the office. Thereby the office facilitates other needs of employees during working hours. It can internally offer facilities additional to the core activities of traditional office work, such as sporting facilities, childcare, small retail shops, restaurants and bars. The management of these additional functions needs not be incorporated into the office company itself; added value would lay in the cooperation of different companies within one building encompassing different facilities that each party involved uses.

The introvert approach could also apply to the larger scale of office districts, making them functionally divers to respond to all professional and personal needs of office employees.



*Figure 6 Entrance of the Village Office of Samas (left) with a glance of the 'market place' and surrounding meeting room, concentration desks, restaurant and coffee bar (right)*

Few examples exist. In Houten, the Netherlands, 'The Village Office', the Samas office furnishing headquarters, opened in May 2006. This office involves, amongst others, shops, bars, a restaurant and a theatre (see figure 6). Related companies make use of the office and present their products there. External and foreign employees of the Samas companies, as well as business partners and clients, are welcome to work and use the services of The Village Office.

## **5. Benefits, costs and discussion**

We will conclude by discussing the general results of assessments of innovative work concepts and findings of others. It was not possible to discuss all benefits and costs related to innovative office concepts, so we picked some decisive ones.

### **Environmental impact**

Despite lacking ambitions of sustainability, in terms of environmental load, The Vision Web concept scored 30% more favourable than a traditional concept (Dobbelsteen 2004). On a larger scale, a society based on one or both of the new approaches can lead to environmental improvement by a factor of around 2 (Dobbelsteen 2004). This involves the influence of the innovative work concept alone. Further technological and lifespan-related optimisations were not accounted for; these would further improve the results.

### **Financial impact**

The Village Office concept turned out profitable in terms of both environmental and financial performance. Concentrating the various functions rather than distributing them saved space, building materials and energy on the one hand, and facility costs for rents and services on the other hand (Dobbelsteen 2006). Productivity expectations are promising.

### **Discussion**

There are, of course, considerations related to new work concepts. We cannot discuss all of them but will highlight some issues.

There are many threats that may obstruct a shift towards the new way of working: they may be related to costs, risks, local restrictions, company and governmental policies, availability of service providers, management issues, client perceptions etc. The balance of costs and benefits will make it a success or a failure.

As the assessment of the Village Office demonstrated, many environmental benefits coincide with financial profits ("ecology = economy"). Some of the developments described therefore will come up naturally, initiated by companies striving for corporate efficiency. However, large-scale development of new office types, e.g. district offices and business nodes, will not evolve by themselves. We cannot expect the market to initiate these. For a wide penetration of sustainable work intervention of the public sector is required. The critical issue is: will there be a strong and persistent power that enforces the developments needed? For the extrovert approach, governments should start developments at transport nodes and lay the basis for enhanced business centres, supportive facilities, and amenities, while avoiding the evolution of a few large corporate offices at these nodes. Meanwhile, smaller local incentives for district office facilities in urban district areas also require government involvement. The (re)development of mixed areas, essential for sustainable development of living and working, will require policy on the transformation of many areas evolved under the post-war monofunctional spatial planning paradigm.

A flexible way of working needs to fulfil certain requirements before it has a similar quality as the traditional office workplace (Edum-Fotwe et al. 2003): access anytime anyplace, shared information resources, scalability, and a secure and customised environment. Accessibility anyplace and anytime is a key-issue for the new organisation of office work, yet mostly one-directional: people desire to reach the office, clients, and colleagues anytime anyplace but do not always want to be reached themselves. In the new economy there will be few sanctuaries of disconnection. In addition to the increasing responsibility to fulfil tasks for the company, people will also have a greater responsibility to secure their private life (figure 7).



*Figure 7 Disconnection options will become more important in the new economy*

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