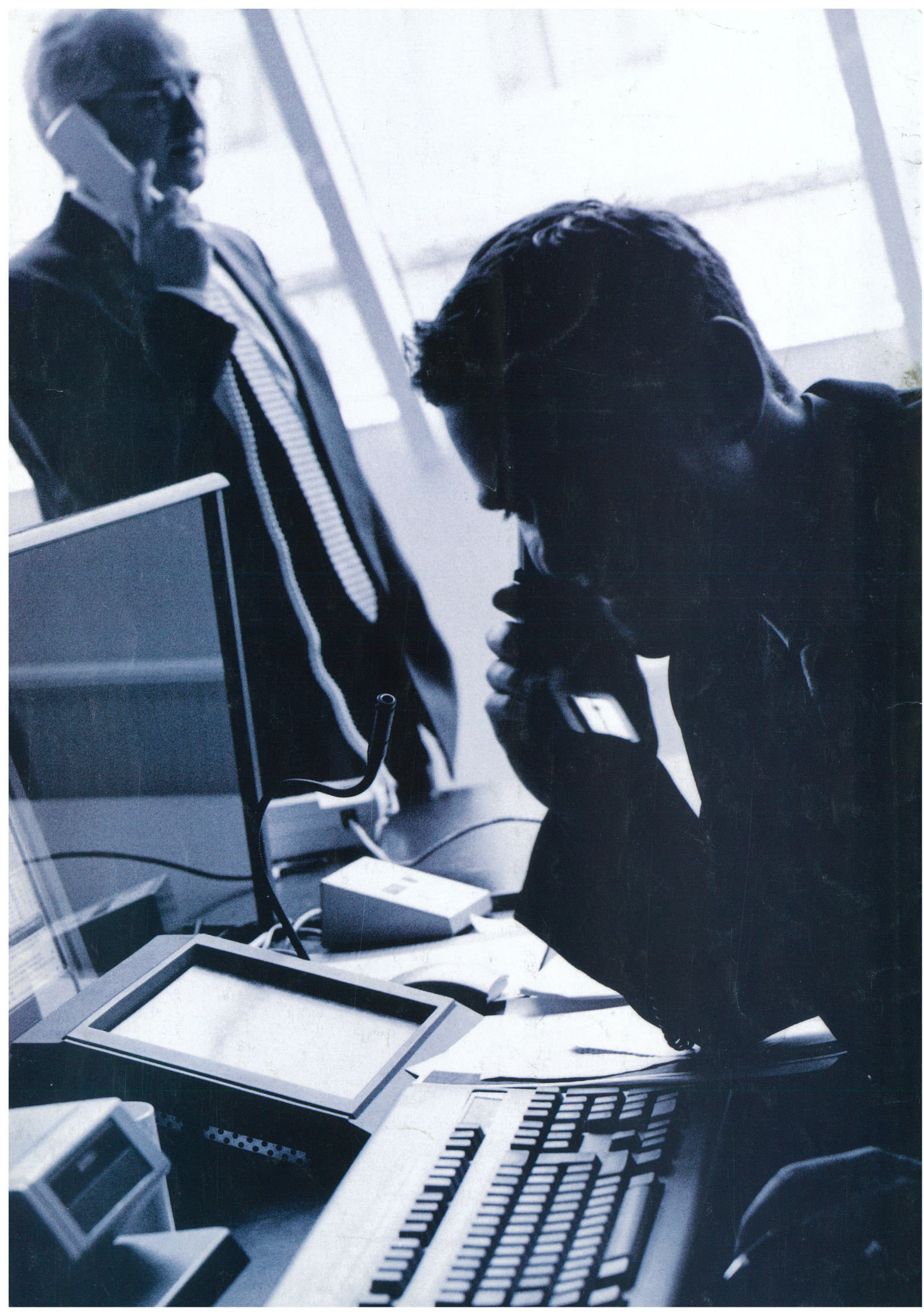


# WORKING ENVIRONMENTS FOR PEOPLE AND COMPUTERS



# ENJOYING YOUR WORK



What is it that distinguishes a good working environment from a bad one? Why do you feel stressed in some work places while you feel full of energy in others? What is the difference?

A good work place should be easy to work at with all the appliances you need in good working order and no hitches. Then you can enjoy your work. That is when it feels easy to get the job done.

It should be as simple as that!

## DIFFERENT SOLUTIONS TO MEET DIFFERENT DEMANDS

The trend of the 1990's with open office landscapes and office furniture on wheels is a good thing when you need to make changes in an office layout as work tasks vary. The "virtual office" as a static entity does not really exist, but is created for each new day, week or project. Work places are adapted more and more often for temporary functions rather than for some particular individual.

In other cases traditional solutions with modules, partition walls and fixed work places prove to be more suitable.

There is always more than one solution for each combination of work premises, the task at hand and the values of the company itself.

It's a question of finding the optimum solution.

## NOISE, AIR, LIGHTNING AND TEMPERATURE

Whatever solution you may end up choosing, the goal is always the same: To create an ergonomic and sound environment where you can work at ease. It should be aesthetically pleasing, provide good quality air and give you a constant and pleasant temperature as well as lighting that is well suited to your needs. Also, the level of noise should be as low as possible. A good working environment should also continue to function even if the unexpected should occur. For example, when your hard disk or network breaks down, you must be able to carry on without any interruption.

That's the kind of work place that has the prerequisites for giving you a feeling of well-being at your work.

## COMPUTERS AND YOUR HEALTH

Developments have made this kind of work place more and more difficult to create. Today's office environments with a lot of technical equipment have added to the old problems of dry air, heat development, irritating noise, etc.

At the same time, the harmful effects caused by office environments with a lot of computers and electrical equipment have created new kinds of symptoms and suffering. For those people who are afflicted by these symptoms as well as their employers, the costs in terms of human suffering, rehabilitation and reduction in productivity are quite substantial.



# WE PUT PEOPLE FIRST

All things should be judged or measured according to the way people react to them. A work place only functions well if people are happy in their working environment. And for people to function properly in their working environment, everything else must function well too! The interplay between people and technology is especially important, not only when everything is functioning properly, but especially when something unforeseen happens or when the time comes for making changes and expanding.

## OFFICE ENVIRONMENTS WITH A LOT OF ELECTRONICS

Work in offices nowadays has been rendered a lot more effective on account of a flood of electronic and technical equipment. However, this has also led to an increase in harmful effects, some of them both unexpected and scientifically disputed.

Problems have often arisen when changing display screens or when being exposed to an increase in high-frequency magnetic fields. Some typical symptoms are: Prickly heat and red blotches on the face, irritation in the eyes and mucous membranes, headache and general fatigue. It is also notable that these symptoms subside at weekends.

Many researchers are of the opinion that several factors such as a combination of heat, poor quality air, an environment with lots of electricity and being exposed to electromagnetic fields, all play a part in causing these symptoms.

Although research is not yet conclusive with regards to the causes of these symptoms – at least not in a strictly scientific sense – all parties agree on the fact that computers and environments with a lot of electricity have given cause to an increase in certain harmful effects, causing greater risks to our health.

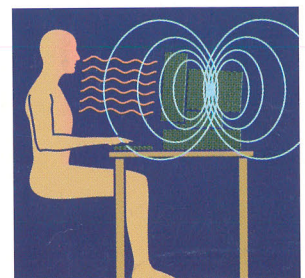
## OFFICE FURNITURE THAT GIVES YOU A SOUND WORKING ENVIRONMENT

Yesterday's solutions were made to solve yesterday's problems.

Today's office environments must be designed to provide a pleasant indoor climate and aesthetically constructed workplaces – everything being within easy reach and in the right place. Besides this they must also solve the complicating factors of a working environment where people are exposed to electromagnetic fields.

Researchers agree that it is possible to do something about these symptoms. There is also a clear connection between how quickly and extensively an environment is made sound and healthy and how soon workers in such an environment begin to feel better.

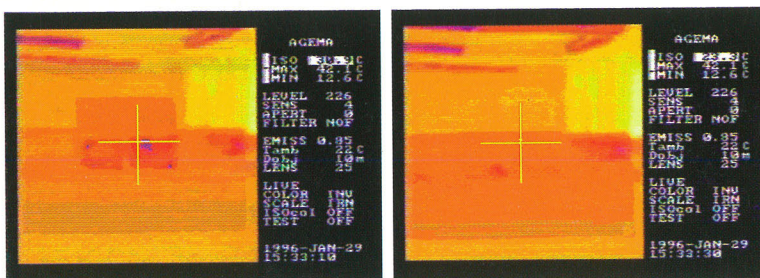
*A workplace that includes a display screen is surrounded by a number of electromagnetic fields: Low-frequency magnetic fields, electrical alternating fields, radio-frequency fields and electrostatic fields.*



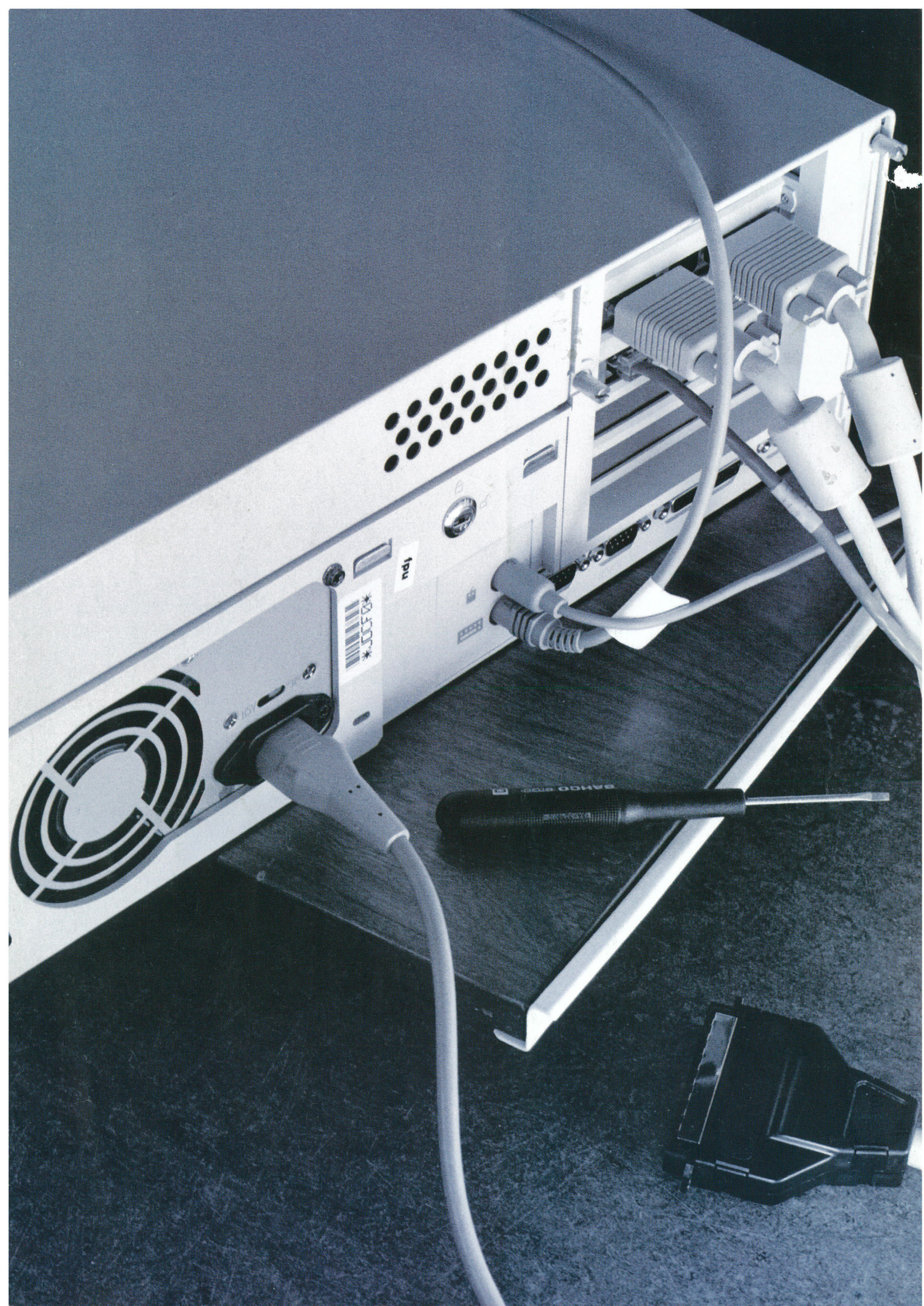
## PREVENTING HARMFUL EFFECTS

If you are thinking of arranging or changing an office environment that includes a lot of technical equipment, it would be well worth your while considering how you can prevent harmful effects that may arise.

Our job is to create such office environments: Office furniture that gives you the best possible protection against harmful effects from both old and new sources.



*Using an infra-red camera, it is easy to see how heat radiation from a display screen decreases when it is shut in behind Liberel's protective glass.*



Liberel's office furniture provides you with a complete solution to your needs. A solution that is well thought out, ergonomic and aesthetic. In actual fact, this office furniture has been developed to solve a number of sticky problems. Here are the most important:

If you put ninety display screens and sixty computers together with thirty people in an office, you will generate approximately 17 kW of heat, which is enough to heat up two normal one-family houses. The air becomes characteristically dry, especially in winter. Exposure to electromagnetic fields increases dramatically. Noise from all the hard disks becomes unacceptably high and you get a maze of cables which makes it difficult for service men to find their way when carrying out service and repairs. Besides this, office space is used ineffectively, as more and more space is taken up for improvised solutions.

## SOLVING THE PROBLEM OF HEAT AND DRY AIR

Conventional cooling methods result in temperature variations, dry air, draughts and the risk of condensation.

Liberel has solved this problem by means of an internal cooling system that disposes of excess heat from hard disks, display screens and other such equipment. Cooling takes place at the very source of the heat - in the office furniture itself, by means of water, air and other cooling agents. In this way, heat and dry air is reduced dramatically. Apart from a better office climate, this leads to reduced costs compared to conventional cooling methods. Property owners avoid complaints and demands to improve office conditions leading to investments that would result in an increase in the rent.

## REDUCING ELECTROMAGNETIC FIELDS

The furniture in its entirety, including the protective glass, is encased and earthed electrically. Scientific measurements carried out by the Swedish Institute of Radiation Protection (ref no: 5279/569/94), show a drastic reduction in the level of electric alternating fields.

Liberel's integrated solution to this problem means a saving in costs compared to improvised solutions that become necessary as health problems arise.

## BETTER SERVICE

Liberel's furniture is constructed in such a way that service can be carried out while work continues. Service can be carried out on the CPU and display screens from the back/inside, where all cables are also accessible.

Lost time is kept to an absolute minimum when moving into new offices making it necessary to integrate a lot of technical equipment into the new environment.

## REDUCING NOISE THAT IS A SOURCE OF IRRITATION

In an office with a lot of computers employees have to put up with irritating background noise caused by cooling fans and hard disks. This noise disturbance is dealt with effectively when Liberel's office furniture is enclosed and all the doors are shut.

## ERGONOMY WITH FLEXIBILITY

Liberel's office furniture is adjustable. Desk height and display screens can be adapted to each individual. The protective optical glass is conductive and gives a pleasant reflection-free picture which has a rich contrast.

Liberel's office furniture can be adapted to match existing office furniture as far as measurements, design and kind of wood are concerned. Straight and bent modules of different dimensions make it easy to fit in.



*1. The central unit's encased functions: Cooling, ventilation, cables and electrical parts are easy to get at. Built-in flexibility often makes service and repairs possible without having to break off work. When it is unavoidable, as in the case of moving office or extensive repairs, breaks in work are reduced to a minimum.*

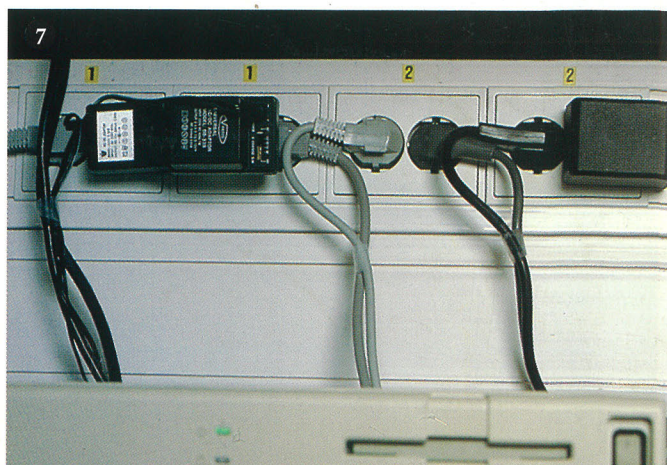
*2, 3. Liberel's office furniture offers a flexible solution with several functions and technical aids being integrated into one small area, creating a well-arranged and easily accessible work place.*

*4. When the protective glass is turned up, you can see the cooling element behind the display screen. The approximately 14 degree cold water creates a pleasant work climate. Dry air and heat are effectively taken care of at the source itself.*

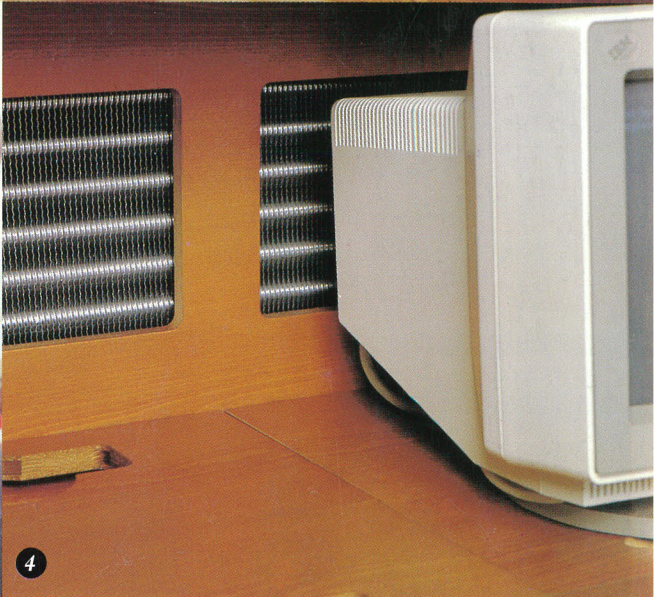
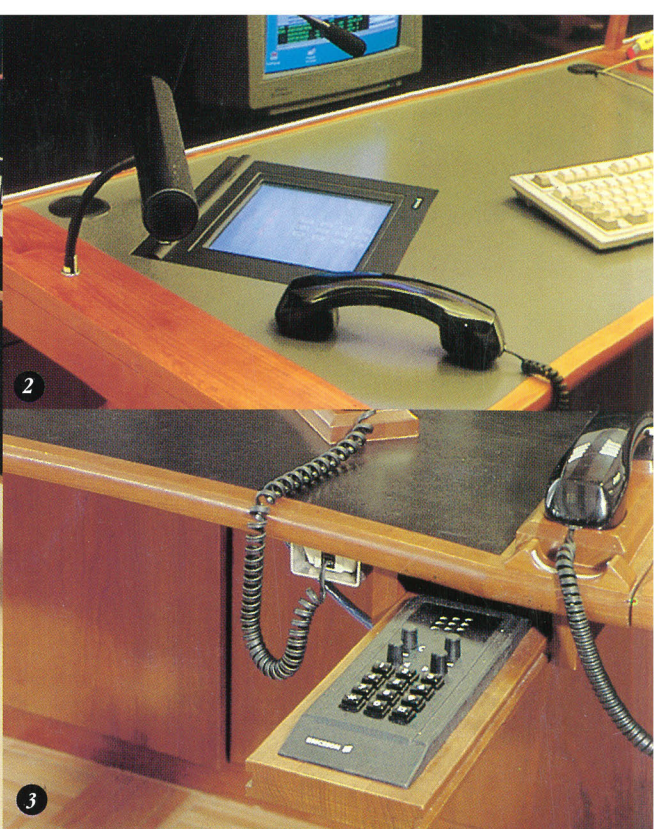
*5. Liberel has acquired an excellent knowledge of the interplay between technology, people and working environments. Electromagnetic fields generated by display screens and other technical equipment is dramatically reduced. The office furniture, including the protective glass, is completely earthed.*

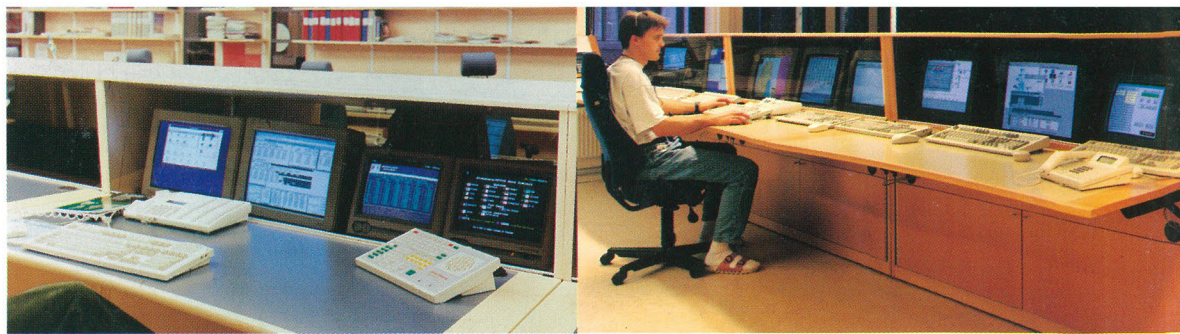
*6. Different people, just like different work places have different needs. Sometimes work is best carried out in a standing position. Liberel's office furniture is easy to adjust.*

*7. All electrical cables are encased and easy to get at. They are well protected from dust and mechanical wear and tear.*



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# ROOM FOR CHANGES

When there is a need to make changes, the chance also arises to make improvements - whether it is a question of moving, rebuilding, expanding, making better use of the existing space or simply reorganizing your work place. At such a time it is possible for you to plan the best work environment from the very start, before problems arise, thereby creating the optimum office environment.

## MAKE DEMANDS ON THE FURNITURE, NOT THE PREMISES

It is quite natural to think in terms of the premises when you think of such demands as air quality, temperature, space, communication networks, wiring, etc. The rent is valued according to whether or not the premises meet these demands.

In order to create options and to save money, we at Liberel choose to look at things in a different way.

First we take a look at the premises themselves - either existing or new - premises that fill the basic demands with regards to location, size, style and cost.

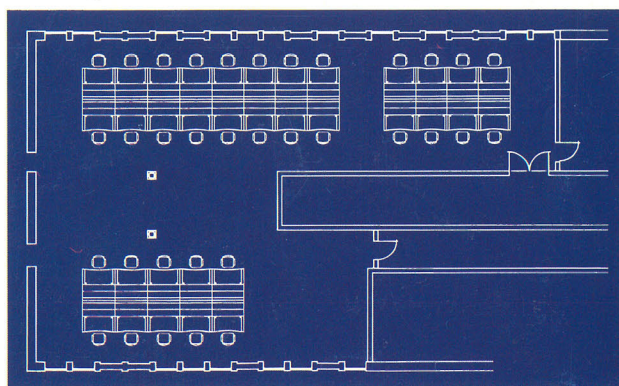
Then, as far as any other demands are concerned, we take a good look at the different solutions we can offer with our office furniture. People must be able to concentrate their time and energy on the job at hand. Nothing else. No time wasted!

## SMOOTH SERVICE AND EASY CHANGES

Being completely dependent on computers in your work has its advantages and disadvantages. If, for some reason, the computers stop; work stops too.

It is therefore vital that maintenance and service can be carried out as smoothly as possible. Changes and rearrangements should not take more time than is absolutely necessary and flexibility must be integrated into office furniture.

It can be expensive allowing for future growth from the very start. It is far better to choose solutions that allow you to make changes and expand when the time is right for it. This calls for solutions that make it possible for people and machines to carry on working at all times, as well as built-in preparedness for making changes and developing.



*An example of how Liberel's fittings make effective use of the space in an existing office.*