Critique of the officescape
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CRITIQUE OF THE OFFICESCAPE

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PREFACE

The current enthusiasm for accommodating practically all
office staff in large open-planned spaces is a radical shift
from traditional attitudes toward office functions. In the
face of such enthusiasm it seems prudent to assess very care-
fully the advantages and disadvantages of the open office,
as compared to traditional cellular office plans.

In Germany, where the current trend began, there is by
now enough experience to begin to weigh the merits and demerits
of existing spaces, and studies of various physical, economical
and psychological aspects are under way. This paper records
the first conclusions thus reached.

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Ottawa   N. B. Hutcheon
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CRITIQUE OF THE OFFICESCAPE

Controversy continues to rage around the concept of the officescape. The disputes and discussions frequently take on the character of a "religious war", with fixed and hotly defended battle lines where the contestants stand ready with foil, sabre and bare fist. Emotions triumph over figures! Developers are intimidated, or at best confused. Defending their respective positions we find office landscapists, the champions of open space, functional areas, activity areas, group areas, and finally the defenders of the tried and true office for individual and collective occupancy.

The author too may not be entirely free of subjective attitudes and tendencies. I leave it to the reader to analyze and judge his point of view.

1. Essential Requirements of an Officescape

Tne fundamental difference between an officescape and a conventional office layout consists in the fact that the former takes the various operational parameters into account in a complex way, coordinating the organizational and architectonic aspects of planning that have led to this spatial form, and giving equal weight to both.

From the standpoint of the organizational and social arrangement of space, a number of basic conditions have to be satisfied before an officescape can be created that will function properly in every respect.

These basic conditions are as follows:

(a) Flexibility and communication

The working stations must be arranged in the plan so as to

have as few interruptions by opaque partitions as possible in
all directions. Long narrow office buildings require long linear
arrangements of work stations, whereas a compact perimeter will
permit a more varied arrangement. The communication charts of
many administrations show very interwoven structures, so that
compact perimeters are more suitable from the standpoint of
organizing the office work with a minimum of friction. In many
administrations a definite trend can be discerned, brought about
by ever greater specialization, the need for more team work and
more and more frequent structural changes in the organization,
so that the communication networks are becoming more and more
compact and interwoven. This trend, in turn, calls for more
and more compact spatial forms.

As experience shows, the minimum permissible distance between
bearing supports is 7.50 m. Smaller distances may easily result
in visual, and hence functional, fragmentation of work areas and
stations.

The office design must facilitate, not hinder, multiple
communications. The work stations and areas which have frequent
interchanges should be close together. A "face-to-face communi-
cation" is preferable to any exchange in writing or by telephone
or intercom, since it makes for a more efficient exchange and
thus makes it possible to eliminate a great deal of bureaucratic
activity, memorandum passing, multiple record-keeping and
communication breakdowns. There can be no doubt that an open
space is favourable to communications, while the individual office
is hostile to it.

At different times working groups and sections will have
different numbers and structures of personnel. A large admin-
istration can certainly not be analyzed in a purely numerical
way, say for the number of personnel in the largest section at
a given time, so as to determine the number of square meters as
a basis for the size of a building floor, or even a general
area. The area size and quality requirements per person tend to
increase continuously with structural changes and with the
growing exigencies of the human environment. The ideal con-
struction from the organizational standpoint would be one that

could be expanded or contracted at will, like a balloon. The
best practical solution is a compact general space having a
maximum floor area so as to provide for unforeseen future require-
ments.

All positions in the total area should be regarded by the
employees as equally desirable. In other words, no sub-areas
should be inherently preferable to others, if organizational
flexibility and efficient space utilization are to be maintained.

(b) Total space and dimensions

For acoustical reasons the following minimum space require-
ments must be observed. Every officescape must be designed for
a constant population of not less than 80 persons in order to
maintain a sufficiently uniform noise level which will quickly
eliminate individual noises and voices. We know from experience
that a certain percentage of individuals will be absent from
their work stations at any given time through sickness, vacation,
break periods, business trips or visits to other parts of the
building, and this reduces the minimum occupation density. In
other words, the minimum general space unit must accommodate
100-120 work stations. Of course, the average area requirement
per work station varies from one administration to another, and
even from section to section. The so-called carpeted area may
be 8.5 m^2 at the minimum and more than 17 m^2 at the maximum.
The commonest average value found today is about 13 m^2 per work
station. From this point of view the minimum size of an office-
scape can only be calculated on the basis of a specific analysis
of the organization.

The minimum space width is 20 to 24 m.

Hard window areas should be reduced to a minimum. Glassed-
in corners must be avoided. The window areas must have drapes.
In this way good acoustic conditions are secured in the facade
zone.

Repeated tests have shown that officescapes for about 250

persons (two minimum officescape units) are considered easily encompassable by the individual office worker. Such areas constitute an improvement over the minimum size of 100 to 120 work stations, and above all are safer, and are now accepted as an optimum size of officescape.

The maximum officescape size is determined by the organizational requirement that there shall be only one vertical traffic core for the office building. Around this principal traffic core it is expedient to arrange a number of service and auxiliary functions which are employed daily by all the office workers (arrival and departure traffic, canteen traffic, etc.). A principal central core of this kind also assures a distinctly oriented traffic layout, unhampered by intersections, and facilitates the smooth movement of traffic on each floor and throughout the building.

Previous investigations and considerations show that the maximum officescape size encompasses approximately 600 work stations. For the individual, it is necessary to provide an officescape that he can easily survey and is not too large in area. The individual must be able to orient himself inside and outside the building. Vast, uniform spaces destroy individuality and have a work-inhibiting, levelling effect. This is just as bad as isolation in conventional individual offices. However, in order to produce a comfortable feeling in space (subjective spaces within the general area) in the officescape, one which will stimulate the work, a number of measures can be taken which combine the organizational and psychological advantages of both the officescape and the individual office.

These measures may be as follows: first, small comprehensive spaces are created, differently arranged with respect to the facade, the core and the ceiling; then it is necessary to have several of these units nicely integrated with each other. At the separation points, of course, a minimum overlap of 15 m must be maintained and the contact length must not exceed half this overlap. With properly planned, esthetically pleasing spatial variations and expertly arranged movable furnishings, and with a new approach to the zoning of the officescape as a whole,

it is possible to achieve the effect of separate zones in
which the individual will feel comfortable, without sacrificing
the organizational advantages.

In order to maintain the necessary flexibility and multi-
directional orientation of the work stations, the width-to-length
ratio of the officescape units must not exceed 1:2.

(c) Conditions of the working environment

The acoustics, air conditioning and lighting must be
optimized. Poor planning and execution, or ill-conceived
economies will lead in the long run to unbearable environmental
conditions which cannot be remedied to any extent by individual
action, as they can in the individual office (opening windows,
doors, regulating heat, etc.). In the Federal Republic there
are already more examples of poor or inadequate officescapes
than good ones.

In my opinion, it is better to accept the objectively poor
conditions of individual offices for an administration, unless
one can be certain that every detail of an optimum officescape
is satisfied. Individual and collective offices are always
psychologically free of problems, whereas an inadequate office-
scape can never be psychologically mastered. In other words,
for the officescape the area of transition where a good effect
becomes a bad one is very narrow and sensitive. For the one-
room office, on the other hand, the span is quite large.

From the standpoint of social environmental conditions
there are, in fact, only two space forms with which the problems
can be solved, namely, the individual office and the optimally
constructed officescape in the form of an office landscape.
Anything in between will be inadequate and will tend to reduce
output.

The possible sources of irritation in officescapes have
recently been investigated in various quarters. In the main,
three types can be distinguished, as follows:

- nearby acoustical distractions,

- visual distractions (disturbing motions), and

- disturbances of orientation and identification owing to the uniformity and lack of structure frequently encountered in officescapes.

These irritants can be dealt with by the development of a new concept of zoning and space moulding for officescapes. It is necessary, at the same time, to distinguish between a natural, inwardly directed officescape zone intended for concentrated office work, and an auxiliary function zone.

In shape and size, as well as height, and by the use of efficient groupings and separations, the officescape proper will be very strongly structured, so that the feeling of vastness and uniformity will give way in the individual to a sense of being contained within a small zone. It is assumed by experts that the subjective feeling of the separate office can in fact be combined with the incontestable organizational advantages of the officescape.

The auxiliary function zones occupy the spaces not given over to office functions, but which must be placed near the office zone despite their separation. Such function zones are as follows:

- the main traffic circulation core;

- the horizontal traffic distributor (principal storey corridor);

- the washroom area;

- the cloakroom area;

- the coffee-break area;

- the central storey service area;

- the conference area and seclusion area;

- individual or display areas as required.

The officescape zone and auxiliary function zones are separated by the fully partitioned spaces of the latter (e.g., washrooms, special rooms, shafts) in such a way as to provide as many passages as possible (access routes) to the officescape.

Such zoning and protracted traffic circulation within the storey removes a large proportion of traffic motions from the officescape itself and directs them to the auxiliary function zone. This eliminates a great many acoustic and visual stimuli from the people who are working. At the same time, a better orientation is achieved which is important especially for very large officescapes (500 to 600 persons per storey).

In contrast to the officescape zone, where the environmental conditions are inwardly directed, in the auxiliary function zone they must be very definitely outwardly directed, and in any case noticeably different. As a consequence of the repeated change of environment occurring during the day, desirable arousal stimuli are given to the individual, renewing his efficiency and alertness.

2. Experience with the Officescape

(a) Costs

I do not go in for the sort of accounting acrobatics by which it is possible to prove anything one wants.

In general, it can be said that the costs of air-conditioned, conventional high-rise office buildings and those of the air-conditioned officescape are approximately the same, given more or less equal standard of furnishings. It is obvious, however, that the non-air-conditioned office building involves less capital investment than the necessarily air-conditioned office-scape. The same applies to operating costs.

(b) Useful and waste space

Many publications have emphasized the considerably greater
efficiency of area utilization in the officescape compared with
the office suite.

In my opinion, these comparisons must be treated with
caution. The carpeted area of the officescape and the floor
area of the conventional office suite are often compared with
respect to the given gross floor area. This lends a superior
status to the office landscape. However, it overlooks the fact
that in the conventional office the horizontal traffic areas,
e.g., the corridors, are counted among the waste spaces, whereas
the non-linear principal traffic routes of the officescape, which
are difficult to measure exactly, are included in the useful
space. It is probably impossible to imagine an office building,
however, that has no traffic routes.

According to my rough calculations, we have to accept a
fixed value of about 2 m^2 per work station given over to these
principal traffic routes. In any honest calculation and comparison,
therefore, allowance would have to be made for these principal
traffic routes in the officescape.

This, of course, does not detract from the great advantage
of many officescapes. The principal traffic routes are flexible,
and when changes are made in the layout they can again be fully
utilized as work areas. Obviously, former working spaces would
then have to be converted into traffic routes. The "waste space"
remains constant. It has merely changed its location.

In our part of the world there are no significant differences
with respect to useful areas between the officescape and the
building given over to small rooms. In the extremely tall office
buildings of, e.g., New York, the picture is quite different.

(c) Performance

In my practice I consider all performance measurements of office work questionable, and I have come across a few performance comparisons in the literature that relate to different kinds of office space.

I shall give these values here without comment:

- Boje published a study in which he attempted to prove that an average output increase of 18.7% is achieved in the officescape compared with the small office design. In a summary he states that a 5 to 25% output gain can be counted on in the officescape.

- Eastman Kodak in Rochester carried out comparative efficiency measurements among bookkeepers and filing clerks in earlier conventional areas and in modern office landscape areas. They found an official 12% increase in efficiency compared with the earlier conventional office.

- Comparative output measurements in a large metallurgical enterprise in Germany shows an increase of output in the officescape of 14.5% for predominantly supervised employees (a sample of 130 people).

(d) Officescape size and upkeep

In many older officescapes complaints are heard that more and more employees get crowded into the same working areas. The officescape lends itself to this. Even the relaxation areas get swallowed up by personnel expansion, and are converted into working zones. In my opinion, this sort of abuse of the office-scape is detrimental to the entire concept.

Workers' councils, trade unions and management in many enter-prises that have, or are planning to have officescapes are

attempting to develop an officescape operating contract which
will limit the density of occupation, will guarantee the organiz-
ation of a free recreation control and recreation space, will
govern the maintenance and renovation of officescape and equip-
ment elements, and will establish a new set of rules of conduct.

(e)   Officescape-attuned behaviour

     Officescapes demand new patterns of behaviour from employees
and supervisors alike. This means that they must be informed
at an early date, and above all repeatedly, on the character
and utilization of the officescape. Finally, the staff should
be studied for their individual adaptation to the officescape.
Experience has shown that as many as 10% of the employees may
have chronic problems with the officescape. This depends
on the spatial arrangement, the personnel direction and the
style of work practised.

     Many problems that arise have nothing to do with the office-
scape but are nevertheless attributed to it in a plausible way.
If mass complaints are received against the officescape, a social-
psychological investigation should immediately be instituted.

(f)   Supervisors

     Executives who derive their authority essentially from
their appointment are afraid of being unmasked in the officescape.
Supervisory personnel without any specific responsibilities
suffer from similar fears. The officescape, in general, requires
a different type of leadership. This factor must not be under-
estimated. The individual has to become more detached; he speaks
more softly, thus extending communication and interpersonal
contact. Many a supervisor at first experiences a negative
reaction because those under him lose their hitherto more or less
pronounced attitude of deference.

The symbolizing of status is much more difficult in the
officescape than in the conventional office, if we are thinking
in traditional terms. The individual room with an antechamber
is the ultimate mark of status throughout the world, and is
therefore the most sought after goal in our hierarchy of admin-
istration.

I am convinced that, as hierarchical social levelling
progresses, one prejudice after another will disappear and new
forms of personal fulfillment will be found. For the present,
however, we have to be concerned about this question of individual
rooms. We cannot be dogmatic about it, for as a rule it concerns
numerically insignificant minorities.

Immediately after an officescape has been occupied we often
hear complaints about unaccustomed overcommunication and lack of
discipline in social contacts. This again requires a new
attitude. The need to communicate is generally increasing as an
almost automatic result of progressive specialization. The tone
of intercourse becomes more relaxed.

(g)   Individual offices in the officescape

The number of individual offices in the officescape should
be kept to a minimum. They should depend on the specific function,
not on the rank. It is absolutely essential to avoid the danger
of the individual office being regarded as a privilege. This
would bring about an irreparable social devaluation of the office-
scape and give ammunition to its detractors. A social devaluation,
however, will detract greatly from the performance motivation
of the employees involved.

(h)   Control

It is often assumed that the officescape affords better
opportunities for supervisors to observe and control their sub-
ordinates. Investigations have shown that owing to the general

change in the behaviour of people this aspect is irrelevant.
On the other hand, there is a greater measure of self-control
by the community. This continuous self-discipline, depending
on its physical and psychic motivation, may unwittingly cause
many a personal problem (a sense of overexertion, fatigue, etc.).

(i)   Orderliness

In many existing officescapes certain fatigue phenomena
become evident in the course of time. Since space and furnishings
are visible to all, any consequent confusion and disorder in
files, work stations and material are clearly evident. Experience
has shown that such things tend to escalate; in other words,
negligence breeds more negligence.

The environment in which we live affects our behaviour.
A lack of order in the office usually reflects a lack of order
in the enterprise as a whole and in the operating processes. It
is my opinion that a great deal of reform is called for in the
course of setting up an officescape.

A "minister of order", in other words a specialist who knows
all about record-keeping, furniture arrangement, space arrange-
ment, space maintenance, office equipment and organizational
engineering, should be available to all employees and departments
as a service. He should be prepared to act both by request and
on his own initiative. In large administrative organizations
this would be a function attached to the head office. In
conclusion, let us consider the empirically determined advantages
and disadvantages of the officescape compared with the traditional
office:

Advantages

(a)   Better continuous flows of work and authority;

(b)   Face-to-face communications are facilitated, leading to
       closer teamwork and fewer bureaucratic impediments.

In the officescape, personal communications can increase by a factor of 2 to 3 compared with the traditional single-office setup;

(c) Rearrangement of work stations can easily be carried out at any time according to organizational requirements;

(d) An optimum arrangement of equipment used by everyone, e.g., documentation, office machines, group or sectional registries, interview stations, etc., is possible;

(e) The exchange of working tools is facilitated, and indeed may be initiated for the first time;

(f) Disturbances arising in multipersonnel offices due to telephone conversation, interoffice visits, different requirements for ventilation, lighting, etc., are eliminated; there are no drafts;

(g) Punctuality takes care of itself;

(h) Environmental conditions (acoustics, climate, lights, visuality) can be optimized according to psychological requirements;

(i) The clutter often found in corners and recesses of the traditional office suites is eliminated. Neatness is imposed automatically by the transparency of the working station and working space. Any kind of disorder immediately becomes visible;

(k) Free break control in nearby coffee-break areas, and the better relaxation and regeneration effect associated with them, increases output;

(l) The exchange of labour between different sections is facilitated;

(m) The separation of groups and their isolation are resolved; common interests and exchange of information with other groups are favoured (no establishments within establishments), dissolution of group egoism, enhanced sense of community;

(n) All class distinctions among employees are dissolved;

(o)   Diverse or incompatible personalities can be separated
      more easily;

(p)   Attitudes towards the enterprise are changed in favour
      of a broader viewpoint and greater insight. This is
      to the advantage of the enterprise;

(r)   Possible intrigues are assuaged or "nipped in the bud";

(s)   Personal relationships become more objective, and in
      general are heightened;

(t)   Fewer absences from the work station, less private activity,
      less idleness.

Disadvantages of the officescape compared with the office suite

(a)   Individual prestige and individual representation appears,
      to many, especially older supervisory personnel, to be
      greater in the individual office;

(b)   Absolute freedom from disturbance either of a visual
      or auditory nature (isolation) is only possible in fully
      enclosed individual rooms;

(c)   The transparency of the officescape may lead to distractions
      during unwonted events (e.g., guided tours);

(d)   Uniformity of environmental conditions (acoustics, ventilation,
      lighting) for all. The urge for one's own individual
      environment!

(e)   The individual and sometimes very personal arrangement
      of the individual room can be applied only in a restricted
      way in the officescape;

(f)   Conversion from conventional arrangement to the officescape
      may take two to six weeks;

(g)   Before being exposed to an officescape the employee has to
      receive intensive and complete instruction.

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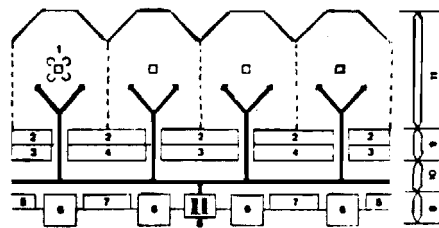   büros in: BAUEN + WOHNEN 1/1969, München

Fig. 1

Diagram of a future officescape
(400-600 work locations)