Workplace environments in municipal planning

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Older industrial districts border on to the main roads, railways and rivers in many of our towns. With their mixture of old and well-used buildings, and newer metal-clad 'boxes', they are regarded by many as blots on the urban landscape. If they are mentioned at all in planning documents, it is usually in negative terms. They are regarded primarily as objects ripe for clearance and renewal. They are described as old-fashioned and shabby, as cramped and unsuitable environments for firms with potential for expansion, but are also described as often having good locations with potential for a more intensive usage.[1]

At the same time studies from Stockholm have indicated small differences in productivity for firms in older and newer premises.[2] A large proportion of floorspace in old industrial buildings has also been modernised at some time, primarily for larger industrial concerns.[3] Both employers' organisations and planners maintain the importance of keeping rudimentary and inexpensive premises for small businesses.[4] In recent years the general understanding of the role of the small enterprise as regards growth and employment has also increased.[5]

Despite the renewal of industrial districts having been discussed for several decades, the number of successful examples are few.[6] Both for planners and property owners it appears to be difficult in practise to accomplish small scale incremental regeneration. According to some accounts, piecemeal attempts at renewal are not sufficient to change the character of an area, and make it attractive for economically successful owners and tenants. In order to reduce the risk of misdirected investment renewal should therefore be planned on a larger scale. But for such comprehensive renewal the necessary demand for premises, and approval of a suitable plan has seldom been achieved.

Studies of old industrial districts have provided insight into how a neglected segment of the urban environment is utilised and valued by small businesses. Studies of the mobility of small firms, differences of views between business entrepreneurs and planners about industrial environments, and the spatial analysis of some workplace areas have contributed to the development of some planning concepts, which could be useful in a creative dialogue between actors with different interests and images of reality.

The multitude of small firms utilising cheap premises in older districts often have a weak position on the property market, and are helped neither by comprehensive renewal schemes, nor slow decay[7]. In the mid-1990s there are, for instance, plenty of vacant premises, but planners in Göteborg claim that certain property owners are anyhow not inclined to let out units to small businesses.[8]

In the mid-1980s, a multi-disciplinary research team at the Industrial Architecture and Planning unit, Chalmers University of Technology, took their first step in this field, and cooperated with the local authorites in Göteborg in an attempt to *carefully renew* an industrial estate for small firms. The area in question was Kungssten in the SW suburbs of Göteborg.[9]

This project contained elements of action research, and involved collaboration with the just over 40 firms and a number of private property owners in the area. Several minor improvements were carried out. Points of view, motivation, and the ability to make decisions among the various performers – companies, property owners and local authority departments – differed so much, however, that any greater coordinated renewal did not develop during the two year duration of the project. In a longer perspective, however, several important changes could be distinguished. Opinions about the future of the area changed, both on the part of the companies, and the planners. In the background material to Göteborg's most recent comprehensive plan from 1992, the importance of retaining central and semi-central workplace areas (including Kungssten) with rudimentary and inexpensive premises, is mentioned for the first time.[10] The studies of companies and premises in the area revealed a state of high mobility among companies and even property owners, which illustrated the need for a broader perspective where the conditions between business environments in a larger area could be studied. Such studies could also be started thanks to the cooperation of the local authority in Trollhättan. This article summarises the results of this research.

Objective and methodology

The main objective of our research on old industrial districts has been to deepen the knowledge about this neglected and often undervalued sector of the urban environment. The obvious initial differences between the various actors' assessment of these areas warranted attention, partly to explain these differences if possible, partly to attempt to develop descriptive terms relevant to several actors – small businesses, property owners, planners – and through these facilitate the mutual task of finding suitable courses for renewal.

The design researcher Donald Schön (1983) has pointed out the limitation in the technical rationality which results in a strict division between knowledge and action, goals and means, science and technology. As another point of departure for the development of knowledge in practical situations, Schön points to the often inarticulate knowledge-in-action characteristic of the experienced practitioner's way of working. In comparison with the researcher, who systematically processes an increasingly defined problem, the practitioner – for instance, the urban planner, the production engineer, the company executive – devotes more time to understanding which type of problem the practical activity deals with. The practitioner is more eclectic and pragmatic, testing different approaches, quickly evaluating the outcomes with regard to both objective and means, as well as attempting to find measures able to be carried out in practise, and design proposals which satisfy important demands as to function and quality. Models, prototypes, concepts are important sources for proposals, and are used as sorts of provisional theories applied to the specific situation in question. Schön outlines possibilites for a field of research that develops similar methods in order to provide better support for professional practise.

In the studies from Trollhättan we have tried to apply this approach, and have used a variety of methods to deepen the understanding of the problem, and generate ideas for the improved planning and renewal of older workplace areas.[11]

Studies in Trollhättan

The research work in Trollhättan commenced with a commission for the Industrial Architecture and Planning unit at Chalmers from the local authority in Trollhättan. This primarily concerned the development of the Stallbacka area along the river Göta. Interest shown by the local authority led to the planning of a larger research project financed by the Swedish Council for Building Research. The local authority planning office also provided an unusually detailed data base covering firms, properties and workplace areas.

In contrast to the studies of Kungssten, this resulted in the inclusion also of modern workplace areas as an element in a larger system of urban business environments.[12]

The following studies have been carried out:

- Interviews with politicians and planners in Trollhättan.
- Processing of the data base with details of about 300 companies in nine areas: Area analysis, studies of mobility.
- Interviews with 40 firms in different areas.
- Telephone interviews with about 100 firms in the process of moving.
- Picture sorting experiments with both business entrepreneurs and planning officials in Trollhättan and Göteborg.
- Spatial analysis of three workplace areas.

Different views about old workplace areas

When the renewal work on the Kungssten industrial estate was started, some planners in Göteborg considered the area, with its small firms and older premises, ripe for demolition in the near future.[13] In the interviews primarily with politicians in Trollhättan, many of the town's workplace areas appeared in some way to be invisible for these decision makers, despite their ambitions to make the town an attractive environment for business.[14] In the planners' assessments of older industrial districts the fear of a vicious circle was often put forward, where weak and stagnating firms move into rudimentary cheap units, and make permanent a process of slowly increasing degeneration.[15]

In contrast to the planners' view of industrial districts, the studies of Kungssten indicated that companies placed a high value on the older well-worn premises within the area. This is often dismissed on the grounds that these companies are only interested in the lowest possible rents. But this is not the whole picture. The companies using the worst premises in Kungssten revealed themselves as being quite young and expansive companies that had come from *even* worse premises, for example, centrally located properties due for demolition. Moreover, the functional adaptation of the business activity to the premises lessened the potential problems with working environment and efficient conditions for production. The firms in premises with poor loading facilities or low standards of ventilation, for instance, had relatively few transport movements or moderately clean production processes. The Labour Safety Inspectorate were in most cases of the same opinion as the companies with regard to the premises at Kungssten representing a considerable improvement.[16]

In the study of methods for the suitable renewal of older workplace areas, we considered that difference in values was an important issue to investigate. What are the pictures of reality and motives which underlie these values, and how can they be balanced in different situations? Our studies have contributed to answering these questions. They are presented in more detail below, and constitute a point of departure for the development of concepts that might be useful in planning.

Why do small firms move?

The basic data for the studies of the mobility of small firms[17] in Trollhättan was a data base covering properties and companies in 11 workplace areas, which the municipality's planning office assisted in compiling for 1989 and 1992.[18] This material shows that 51% of the premises changed use by businesses moving between different premises during the survey period. If closures and moving away from the town are included, the annual change is 22%, which can be compared with the general change of address frequency of 15–20% registered every year by the Swedish National Bureau of Statistics in their central business and workplace register. Furthermore it is evident that the reduction in employment during the period occurred mainly in larger firms and places of work.[19]

The details of the roughly 160 firms in the data base which had changed premises during the period were utilised during telephone interviews to find out the reason for moving. Several of the firms had closed down or moved away, but just over 100 could be reached. It turned out about 70 firms fulfilled the set requirement of having moved at some time during 1989–92.

Despite the recession, which set in during the period, these often very small firms (average approximately 7 employed) have deliberately moved to larger and/or better premises. Several have increased their number of employees in connection with moving. Out of the smaller proportion which reduced their number of employees, 40 % have nevertheless moved to larger premises. The information provided

could to a certain degree be checked by comparing the assessed building tax values of earlier and current premises, which revealed that 65% of the firms moved to premises with equal or higher property tax values. The range in standard of the premises used by different companies is also large, both before and after moving.

An important conclusion from this study is that small firms in Trollhättan have utilised a large variety of premises of varying standard. This need not imply anything more than that the property market functions, and that both rudimentary and cheap and more high-value premises find tenants. This in itself does not constitute sufficient reason to safeguard older run-down premises, and perhaps unnecessarily retain poor production environments. However, studies of Kungssten revealed that the planners' fear of a vicious circle arising out of inadequate production environments in old premises may be unfounded. The second important conclusion from the Trollhättan study confirms this. *The mobility among firms is high, but a large majority (74%) of firms move deliberately to better premises.* When combined these two conclusions provide an argument for care and consideration with regard to rudimentary cheap premises in older areas. To eliminate what superficially may seem to be basic and unsuitable premises may be likened to sawing off the lowest rungs on a ladder leading to better conditions.

According to the findings of this study, an important point of departure for the planning and regeneration of business environments would be to attempt to safeguard and develop a spectrum of premises of different standard, price and size.

How firms choose premises

The studies of Kungssten indicate that when different alternatives are on offer, small firms have the ability to chose premises whose shortcomings do not have serious consequences for the specific activities in question. Companies, for instance, with limited transport needs could find premises acceptable where loading and unloading facilities were less satisfactory.[20]

Interviews with business entrepreneurs in Trollhättan sometimes also revealed a strong awareness of the standard and status of their premises, which they did not want to be either too high or too low. Some instances: A firm which built new premises during the building boom of the late 1980s deliberately tried to attain the right level of building standard and quality in order to give customers and colleagues in the same branch an impression of both solidarity and restraint. Despite this, however, when the business cycle turned the manager felt that the new building after all was too lavish and luxurious. Some persons who had recently started an advertising agency considered that their jeans style of clothing was inappropriate among the consultancy firms in a new business centre. The head of a small engineering firm, which had recently moved into premises a few years old, expressed that his premises should be such that one could both receive a customer dressed in an executive suit from a large company in a new Saab, as well as a colleague in overalls in a Toyta pick-up truck.

Observations that business premises function as a signal and symbol for a certain type of firm were confirmed by tests involving the sorting of photographs of industrial environments.[21] The 20 photographs were selected so as to represent several possible dimensions in the assessment – size, age, standard, neatness. The purpose of the test was to investigate the grounds on which the pictures were classified, partly by a number of business entrepreneurs in different areas of Trollhättan (N=26), partly by a number of planners and other officials employed by the local authorities in Trollhättan and Göteborg (N=20). The participants were also to characterise the pictures in each respective group.

Firstly, it appeared that the business entrepreneurs saw to a large extent the same similarities and differences between the pictures as the planners, which became evident from the clustering analysis of the sorted groups of pictures. The characteristic difference between the groups was instead that the business entrepreneurs to a large extent described the illustrated environments in terms of *activities*, and simple terms such as the age, and type of buildings. The variety of expressions which described branches and types of firm was large. The planners on their part had several and more precise terms to describe the qualities of the *built environment* as such.

These findings correspond well with other studies in environmental psychology. According to a summary by Rapoport (1982) users and non-professional people tend to perceive and appreciate *associational* values in the built environment. They associate buil-

ding forms, materials, ornamental details and planning patterns with socially more or less attractive life styles and behaviour. Professionals, such as architects, designers and art historians emphasise in their judgments rather the perceptional qualities of *form* in the environment. Canter (1977) finds a logical explanation for the differences in the varying roles these two categories have in relationship to the environment. Users are interested in the practical and social exchange they are able to gain from a certain environment. The judgment made by the professional is a consequence of both vocational training, and the task of the profession. When applying our material to this theme it can be maintained that it is the planners' responsibility to take many different interests into account. Usually they also have or take a special responsibility for the aesthetic consequences for the built environment as a whole. They react both on their own behalf, and on the behalf of others, when faced with excessively shabby and dilapidated environments.

During their attempts at sorting the pictures, the entrepreneurs were asked which of the groups their current premises belong to, and to which type of environment they could consider moving. The well-developed feeling for the type of environment suitable for their own firm, which had evolved in several of the interviews, was in this way also confirmed. Nearly all the entrepreneurs had a realistic view about suitable and attractive premises for their own particular firm. Those accommodated in, what according to their own view were, older rudimentary premises, did not wish to be housed in luxurious glass palaces for larger and technologically advanced companies. Most chose another picture in the same group corresponding to their present premises. This applied even to those housed in smart modern premises of high standard.

With support from these studies, observations that small firms utilise and often move within a broad variety of premises of differing standard and size can acquire a further dimension. Attractive premises for small firms mean something more than simply being cheap, and corresponding to their current space and equipment requirements. *They shall also correspond to their own opinion, as well as that of their colleagues, as to what constitutes suitable premises for a firm of their size, status and field of activity.*

What to the planner and other observer of older industrial buildings in a static, local perspective appears as older, shabby and less functional premises is regarded by the flexible entrepreneur as part of a broad supply of more or less *attractive* alternatives to the premises he already has.

Which areas can firms chose between?

The detailed data base of the companies and properties in eleven industrial districts of Trollhättan, which the local authority planning office helped to compile, provided the opportunity of describing and characterising these areas in several respects. The key ratio based on property data, business structure and changes during the period of investigation 1989–92 provided the basis for describing the areas as *expansive modern* areas, *stabile older* areas as well as *renewal* areas and areas with *contradictory indications*: The age and standard of the buildings, the plot ratio floor-space index, type of property owner, normal size of company were examples of statistical key ratios. Changes in employment and branches, new construction result in more dynamic indications.

In most cases these key ratios gave quite obvious indications as to which category the area could be referred to. High age, low tax assessment value, private property company as main owner, many small firms, vacant premises and high mobility of firms normally indicate need of renewal (Nohab, Källstorp). A more differentiated ownership with above all several owner/occupiers, (firms that own the property where their business is carried out), instances of new construction, and moderate changes in the number of workplaces indicate stability (Ö. Håjum). Especially interesting were the areas that revealed contradictory indications. An older area near the centre (Tingvalla) showed several signs of being in need of renewal, but also had a relatively stable level of employment. An older run-down and partially low exploited industrial zone with large companies (Stallbacka) was able to show instances of renewal, and an influx of small firms.

We had a notion at the beginning of these studies that it would be possible to carry out more detailed analyses of the character of the areas, where location, buildings and company structure together would be an indication of business environments with a certain degree of stability over a period of time. During the turbulent period when

Some characteristics of the nine workplace districts in Trollhättan.

	Halvors-torp	Stall-backa	Östra Håjum	Skogs-torpa	Nohab	Västra Håjum	Ting-valla	Källs-torp	Lex-torp	All
Year of construc-tion, average	1985	–	1969	1979	before 1929	1967	1963	before 1929	1973	–
No. of work-places (1989).	49	34	61	37	35	26	35	16	11	304
Work-places, average no. employed	13.7	17.1	21.3	17.6	24.0	11.8	21.0	1.9	8.7	17.3
Changes in no. of work-places 1989–92	33 %	29 %	– 5 %	– 5 %	– 11 %	– 19 %	– 12 %	– 8%	– 27%	1 %
Changes in no. of employed 1989–92	– 5 %	25 %	– 6%	1 %	– 28 %	– 12 %	– 13 %	– 57 %	– 10 %	– 23 %
Tax assess-ment of building, average (SEK/sq m)	1079	749	1069	942	664	811	532	351	1069	895
Propor-tion owner/ occupiers *	26 %	39 %	43 %	58 %	0 %	17 %	57 %	0 %	97 %	43 %

* Firms owning the property where their business is carried out.

the studies took place, however, with a construction boom, property crisis and recession, many changes occurred. In these three years the areas completely changed character with regard to branch and size of firms. Newly constructed premises became emptied. Large companies were replaced by small ones of various kinds.

During interviews with the entrepreneurs from different areas in Trollhättan, it was none the less revealed that several of these areas had a clear physical *identity*. The businesses were asked to name the different workplace areas, and also to draw them on an outline map of the town. Different factors contributed to create an identity for the various areas. The location with regard to the traffic system turned out to be an important factor. Here not only the factual accessibility for traffic was referred to, but also the ability to be seen from different roads. Groups of buildings with a certain homogeneity strengthened the identity, as did the existence of predominating well-known companies.[22] Nohab was often the area which was named first. The major historical importance Nohab once had as an industrial concern obviously contributed to the strong identity of the area.

Which areas are attractive?

The Nohab area, however, is also an example where a clear identity is not in itself the same as being highly *attractive*. In the local authority's heritage conservation programme, this impressive and, from the industrial heritage point of view, important complex had an insignificant place. There were plans to demolish part of this complex in connection with the provision of new housing.

Nohab is a heavy industry complex which for some time has served as a small buisiness incubator. (Photo: Anders Törnqvist)

Companies that moved from this area criticised the poor access for traffic. The area was felt to be inaccessible, large and hemmed in towards the river, and with access roads of lower standard than most other areas. According to these entrepreneurs, the large heavy brick buildings strengthened its identity, but offered less suitable premises for small firms, being ananymous in such large buildings. These large structures make it difficult to provide easy-to-find entrances for their customers, and personnel facilities which are well located.

The above mentioned study of mobility showed that only a few areas attracted the large number of migrant firms. The greater part of the approximately 80 small firms which were newly started, or moving to Trollhättan chose Halvorstorp (30%) and Stallbacka (24%). Firms moving from other areas in Trollhättan also concentrated in these places (24% for each).

Among the areas vacated by firms, Nohab is the big loser. This area lost 11% of its firms and half of its number of employed. Most have gone to other areas, Halvorstorp and Stallbacka.

Halvorstorp is the most modern area. With a location adjacent to trunk road 45 it has good traffic access and a distinct and attractive identity. During the boom, expansive companies built new premises here, often with extra space for hiring out. The latter became an attractive alternative for several firms when the rent levels were reduced in connection with the crisis in the construction industry that followed. However, even Halvorstorp has lost a number of firms to the other expansive area, Stallbacka. A small property developer has revitalised part of this area as a result of active marketing, flexibility and a service orientated policy, and succeeded in attracting various kinds of small firms which are able to complement and support each other.

A small develpoer has renewed an old industrial estate, Grafiten, providing new office space at the entrance of the estate, as well as low cost, refurbished industrial space in less prominent locations. (Photo: Anders Törnqvist)

While the identity of an area is usually bound to long-lasting factors which are difficult to change, attractiveness is a quality which is apt to change quicker. Certain firms which moved away from Nohab criticised the way the area was managed, as well as the plans for changed land-use. One of the two property owners is a large construction and property company, which for among other reasons purchased its part of the former works area for the construction of housing. According to some of the firms interviewed, these plans to construct housing, and to demolish some of the older industrial buildings, have given rise to uncertainty about the future of this area as an environment for small enterprise.

Spatial organisation

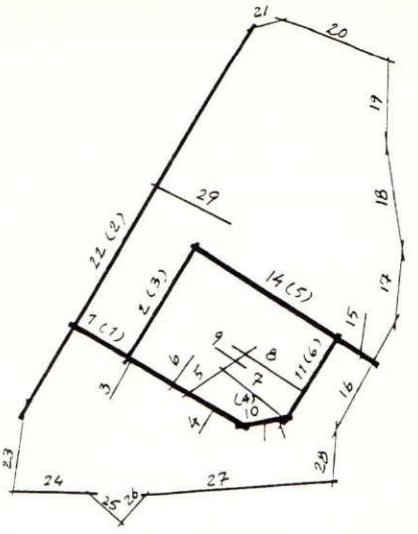
The interviews with the migrant firms indicated that even the spatial organisation of the areas could be of importance for their attractiveness. Certain firms in the Nohab area complained about poor accessibility, and not being able to be seen in this large industrial complex. Correspondingly, firms in Halvorstorp emphasised the good traffic situation in the area, and the prominent and easily accessible placing of the individual buildings along a central main street. These companies had also noted the regeneration of the Stallbacka-Grafiten area, where a new office building visible from the main road marked the entrance to an area offering a broad spectrum of premises in older, partly modernised buildings of varying standard and price.

In order to test the validity of these indications, a special study[23] focusing on the spatial analysis of these three

areas was carried out using Space Syntax Analysis[24]. Even an overall assessment of the street and area structure revealed differences, above all between the closed blocks of the Nohab area, and the more open patterns of building in the other areas. The quantitative spatial analysis of the areas confirmed and clarified more exactly the differences between the areas. Halvorstorp and Stallbacka-Grafiten have the most accessible parts of the street system (integration cores) located at entrances and main streets through the area, whereas the integration core at Nohab almost completely corresponds to surrounding access roads. The Nohab area not only has difficult access, but is also difficult to orientate oneself in, compared with the other areas. This finding is interesting because the age of the buildings, which otherwise is assumed to be one of the more important factors with regard to attractiveness, points to a different classification of the areas. As with the Nohab area, Stallbacka-Grafiten is an older area, but is just as attractive as the more modern area, Halvorstorp, measured in terms of its share of firms moving in.

Further spatial differences between Stallbacka-Grafiten and Halvorstorp, which were brought to light as a result of the more detailed analysis, caused us to reflect more deeply about the relationship between *diversity* and *'surveyability'* with regard to the supply of premises for small firms. A given diversity of premises of shifting standard and price may be organised spatially in different ways. Within a town the identity of different areas contributes to surveyability. Firms are aware that in certain areas there are premises, especially of a certain type. But it is not given that a clear-cut division between areas with solely modern or older premises is the optimal one. Access to simpler, cheaper premises in the modern Halvorstorp was regarded to be attractive. And with regard to the spatial structure, one can speculate about the advantage of simpler buildings being separated in space from buildings of higher standard.

The studies of Kungssten revealed, for instance, how contacts between neighbours function in urban business environments. In contrast to the more stabile, social and businesslike relationships which might occur in smaller places e.g. the well-known Gnosjö district in southern Sweden, there is a risk contacts between firms in larger towns may be superficial and short-term. But this does not mean they need to be unimportant. Even superficial contacts between people, so-called weak-ties[25] contribute to surveyability and security. To be able to recognise faces and patterns of movement in an area provides a sense of security, and a preparedness when faced with problems, such as burglaries. At Kungssten several firms appreciated the diversity of branches and types of firm in the area, and utilised each others services and products. Proximity, and being able to recognise people also made it possible to solve conflicts in a friendly manner e.g. issues concerned with vehicles blocking access. But many trading companies and larger manufacturing companies in the area could also feel troubled by the proximity to what one regarded as rather untidy small engineering firms, despite in certain cases using their services.



The axial map of Stallbacka-Grafiten which indicates a relatively high degree of accessibility and intelligibility.

From this perspective, it thus can be seen as an advantage that Halvorstorp, because of its spatial organisation, offered both a diversity of buildings of differing standards and a certain separation between blocks of different standards, which minimised conflicts and clashes of status. With regard to the spatial structure of the Grafiten area, buildings of differing age and standard were more integrated, accessible and visible for each other. The diversity was more easy to grasp at the local area level, as it were. What advantages and disadvantages these different spatial patterns might have for the development of small firms, and the regeneration of workplace areas needs to be studied further.

The study of mobility and the experiments with sorting pictures together with entrepreneurs and planners provided explanations for the different evaluations of the environments for small firms. *What appears to be unatt-*

ractive disorder to the planner, whose task is to promote visual orderliness, might appear to be a stimulating diversity of alternatives for an entrepreneur hunting for premises to suit his specific needs.
The spatial analysis of Halvorstorp and Grafiten, in turn, illustrates how conflicting demands are able to be dealt with by means of spatial organisation. The question is what consequences this insight about changing usage and differing assessments of business environments can have for local authority planning.

Local authority planning strategy

Interviews with planners in Trollhättan about the continued work on comprehensive plans for workplace areas revealed the difficulties in balancing between the prospect of being able to steer, and the demand to adapt themselves to other actors, companies and property owners. There was, for instance, a great deal of uncertainty about a suitable future use for the extensive Stallbacka area, and what sort of changes that were possible.

A manifestation of this difficulty was a certain discrepancy between the levels of planning.[26] Those involved with the detailed development plans often consider that the comprehensive plans provide directions which are difficult to interpret in the concrete task of detailed planning, and the granting of planning permission for building works. At the same time one does not want the comprehensive plan to have such a steering effect at the detailed development plan level, so as to be unable to adjust the decision to the specific case in question. Those involved in the comprehensive planning, from their side, consider that the guidelines of the comprehensive plan are not followed at lower levels. Comprehensive planners also maintain that the detailed development planners have difficulties in communicating concrete and local experience in such a manner as to be usable at the comprehensive planning level. The reasons for these problems may have been that the methods used in the comprehensive planning work in Trollhättan were still in the process of development. However, reasons for complaint of this kind may also be that an increased rate of change, and increased demands for adaptation in individual cases, make it generally more difficult to balance flexibility and control.

The possibilities of the local authority being able to steer the development of workplace areas have normally been tied to the detailed development plan. The old plans for industrial districts often had crude directions about permitted usage, which could remain in force for a long period of time. They created relatively easy rules and predictable directions for implementation, but could be deficient with regard to both flexibility and control.[27] It was not always possible to prevent changes of function, such as supermarkets in industrial zones. With the advent of the new Planning and Building Act, the local authorities have gained increased legislative opportunities to differentiate the demands on development in different geographical areas.[28] One is able to sharpen the regulations in the detailed development plan to define land-use and environmental demands according to the natural resources act e.g. on the levels of maximum permissible noise or effluents. The new instrument – 'special area regulations' – is taken up in many comprehensive plans, for instance, as a means of sharpening the obligation for planning permission in areas lacking detailed development plans, but which are classed as valuable from the point of view of heritage conservation. However, in actual practise these have only been applied in a few cases.[29]

The regulations tied to the planning instruments have generally become less important compared with the sharpened process regulations, which place increased demands on information and consultation between the bodies and interest groups involved in the planning.[30]

There are thus increased possibilities of both more stringent environmental demands, and more flexible interpretations of local circumstances, where adaptable solutions can be developed in dialogue between the parties involved. To utililise these possibilities, a suitable structure for the decision-making process is required in such a way that both control and flexibility can be attained.

Knowledge in action

In such a process, according to Molander (1993), *the dialogue* constitutes a fundamental model for knowledge in action. This applies to both knowing *what* one does – be able to develop and use terms which focus attention on essentials – and *why* – to be able to provide good arguments for the statements and proposals that are advocated.

On the basis of our various studies of small firms and workplace areas, we should like to suggest the following

concepts as being usable in such a planning dialogue.

Access to a *diversity* of premises of different *standard*, *size* and *price* appears to be a factor of importance for the mobility and positive development of small enterprises. The term 'diversity' focuses attention on this condition, and can easily be made operational in a manner which is relevant to both entrepreneurs and planners. Diversity can be threatened by large scale and hasty redevelopment schemes, but on an overall level is usually quite difficult to change. This means it also takes a long time to increase diversity. Within a specific area it may go quicker.

The attractiveness of premises and areas implies different things for different actors. For many entrepreneurs the following factors are important: situation, traffic access, good value and functional premises, business and consumer services in the area as well as on the part of the property management, proximity to successful firms, positive development in the area, good future prospects. Besides planners, some firms and other citizens often demand certain aesthetic standards. Our studies to some extent contribute reasons for these different values, and this may foster a constructive dialogue. One factor which can facilitate mutual understanding and action is that the attractiveness of premises and areas can be quickly changed.

The possibility of finding attractive premises when there is a wide diversity is facilitated by *surveyability*. At the town level, the possibilities of surveyability are influenced by *the identity* of the different buildings and the areas, which in turn are shaped by several factors: the character of the built environment, age, traffic access, companies that predominate, heritage values etc. The identity is usually very difficult to change. At the district level, the possibilities of surveyability are influenced by the *spatial organisation* of the streets and blocks. The spatial organisation of an area is possible to change by additional building and traffic regulation. Spatial organisation can often be used to satisfy contradictory demands as to what constitutes attractiveness, and it can also contribute to uniting diversity and surveyability in such a manner that the attractiveness of an area is not lessened. The concept of spatial organisation focuses attention on the possibilities of design competence being able to deal with demands that are difficult to reconcile.

Planning research – support for dialogues

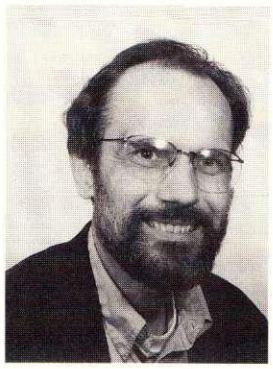
The built environment and its utilisation has an intermediate position as an object for research in relationship to natural and cultural phenomena.[31] Regarding the former, it has pertinently been stated that the problems are obvious, research searches for *the solution*, explanations, conformity to general laws. When it comes to the latter, the research object – the novel, painting, piece of music, custom – represents a solution of some kind. The research sets out to find *the problem*: the objective, the motive, the function, the conflict. In this perspective, with regard to planning the built environment, one can say neither the problem nor the solution is manifest in the same clear manner.

This motivates, according to our view, a problem orientated research, which is able to assist the creation of knowledge in a dialogue between the various actors in the planning and building process, as a preparation for real physical and social changes. The research contribution is primarily to develop the language in this dialogue. It can develop concepts focusing attention on qualities in the environment which have to be balanced against each other, and produces empirical knowledge providing examples and observations to support this balancing in individual cases. These concepts must be understandable and relevant for the actors with different roles and interests in the planning. But the objective is not to establish a planning model aimed at reducing opposing interests in the planning process. On the contrary, research findings should preferably contribute to the clarification of these different roles and interests.

Some practical applications of our research are thus that entrepreneurs are not to be trained to change their opinions about what constitutes attractive premises. On the contrary, by facilitating mobility they should be stimulated to improve their conditions at their own discretion. Property owners are to be encouraged to contribute to the diversity of management strategies and the supply of premises, which can involve both new construction, and the careful renewal of older buildings. Planners do not need to assign suitable premises and areas as fitting for certain kinds of firms, but instead can concentrate on securing a surveyable diversity of attractive environments, which are sufficiently varied in function and appearance to satisfy the changing needs of small enterprises.

Notes

1. Examples of this attitude are to be found in several studies of large towns from the 1970s: *Marklok Näringsliv i Stockholms län 1971,* V*erkstadsindustriutredningen (*1978), and Johansson, & Strömquist (1979). See also Johansson & Snickars (1992). In later reports, such as the comprehensive plan proposal for Stockholm (*Översiktsplan 90*) the need to concentrate and transform older industrial districts near the waterfronts for new uses, housing and office accommodation was maintained. But the bodies consulted, both within the municipal departments and outside, maintained the importance these older areas have for commercial activities (*Samråd-utställning-beslut, Processen kring översiktsplan 90*).
2. Törneman (1976).
3. Törnqvist (1982).
4. See, for instance, Hantverksföreningen's reply to the consultation document relating to the proposed comprehensive plan for Stockholm 1990 (*Samråd-utställning-beslut, Processen kring översiktsplan 90*) sid 57.
5. In a current study about the dynamics of Swedish industry and commerce it appears that small firms with less than 200 employed, despite a large turnover in the number of newly started and discontinued firms, accounted for 70% of the newly created jobs during the latter part of the 1980s (Davidsson et. al. 1994) p. 214.
6. The regeneration of the northern waterfront in Göteborg with its successive transformation of the shipyards to environments for vocational training, small enterprise and housing seems to be one of the most interesting. But in a longer perspective the demand for new premises has been weak, and it has proved difficult to carry out larger transformations. Community investment in infrastructure has declined generally in OECD-countries during the period 1967–85, and is also considered to have weakened the private investment climate. (Petersson, 1990).
7. See for example Fothergill et al (1987) and Ball (1994).
8. These details have been confirmed in a current study by Strömgren (1995).
9. For a summary, see Törnqvist (1988) and Birgersson (1991).
10. Arbetsplats Göteborg 92, p. 31.
11. A more detailed description of the methodology in what one might call research-as-design is to be found in Törnqvist (1995b).
12. Contact persons in the municipality of Trollhättan have been Per-Magnus Bengtsson, planning chief, and Hans Ringstedt, planner. Matti Lagerblad led the work of compiling the database. Excluding the authors of this article, the following persons have contributed to the various sub-reports: Jukka Corander, Anna Forsberg, Göran Lindahl, Ye Min, Saddek Rehal, Helena Westin.
13. Törnqvist (1987), p 18.
14. Törnqvist & Birgersson (1995).
15. See for instance, Johansson & Strömquist (1979) p. 130, and *Sickla, Gemensamma planeringsförutsättningar...* (1994), p. 24.
16. Törnqvist (1987).
17. The unit studied is the *workplace* which may be identical to the business or one of several workplaces within a larger firm. For the sake of simplicity, and where it does not lead to misunderstanding, the terms 'small firms' alternatively 'small businesses' are used in the main text.
18. The basic data consisted of the Swedish National Bureau of Statistics' business and workplace register, property tax assessment data, complemented by local business registers, and field surveys in the areas.
19. Törnqvist (1995a).
20. Törnqvist (1987) p. 105.
21. Törnqvist & Corander (1995).
22. Compare with Lynch (1960), who proposes that paths, edges, districts, nodes and landmarks are the important elements that create identity in the urban environment.
23. Törnqvist & Ye (1995).
24. Spatial analysis or Space Syntax Analysis is a mathematical technique used to describe and analyse topological relationships between space and communication channels in buildings and urban areas. It has been developed by the English researcher, Bill Hillier and partners (Hillier & Hanson, 1984). This theory is still under development, but several interesting results with practical implications have been achieved. The technique and research in this field has been presented in a special theme issue of *Nordisk Arkitekturforskning*, 1993, no. 2.
25. Granowetter (1973).
26. According to a study of the planning in 12 local authority areas 1985–89, the average area covered by a detailed development plan was considerably reduced during the period. (Fog et.al. 1992, p. 60).
27. Rönn (1995), in a study of planning permission and appeals by companies having been refused planning permission, regards the large proportion of changes as an indication of the shortcomings of detailed development planning.
28. For example, varied obligation to seek planning permission, several types of planning permission, special area regulations etc. (Fog et.al, 1989, p. 109)
29. Fog et.al. (1992) p. 63.
30. Fog et.al. (1989), p. 116.
31. *Socio-materia* is a term which attempts to express the relationship that we both shape and are shaped by our buildings. See Østerberg (1985), p 9. See also Johansen's article "Kulissernas regi" in the same work. How the power structure of society is influenced and reproduced through the design, function, and spatial structure of the built environment is dealt with in a broad historical perspective by Markus (1993).



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