einem weiteren, vom Japanbild der Geopolitik beeinflußten Aspekt ging es um Haushofers Großstadtfeindlichkeit und sein Unvermögen, wirtschaftlich-industrielle Strukturen in ihrer Bedeutung zu erkennen. Dabei zeigte sich, daß das aus Vorurteilen geborene wirtschaftspolitische Feindbild korrespondierte mit der konkreten Grundkonzeption der Haushoferschen Geopolitik.

Durch diese Ergebnisse wird der unwissenschaftliche, apologetische Charakter der Geopolitik noch einmal unterstrichen. Als Folgerung bleibt, daß es auf absehbare Zeit nicht sinnvoll sein kann, den Begriff „Geopolitik" mit gewandeltem Inhalt weiterzubenutzen, etwa als Synonym für das in der Politischen Geographie in aller Differenziertheit mitbehandelte Beziehungsfeld Raum-Staat oder als hochtrabender politischer Lagebegriff. Geopolitik war kein Begriff, der der wissenschaftlichen Ordnung und der politischen Klarheit diente; so wird er auch künftig kaum zu begrifflicher Ordnung und Klarheit beitragen können. Selbst zur Kennzeichnung wehrstrategischer Positionen ist er vermeidbar. Denn heute wird es zunehmend deutlicher, daß ein Denken in Macht- und Strategievorstellungen, die Inhalt und Terminologie der Politischen Geographie und Geopolitik zu Haushofers Zeiten bestimmt haben, im Zeitalter weltweiter Vernichtungs- und Ausrottungsmittel nicht mehr zulässig ist.

So sind heute im Bereich der Politischen Geographie Vorsicht, Behutsamkeit, Gewissenhaftigkeit und Strenge des wissenschaftlichen Arbeitens besonders nötig. Die politische Geographie gehört zu den schwierigsten, weil kompliziertesten Teilgebieten der Geographie. Ihr stellen sich aber auch Arbeitsaufgaben, die in ihrer Zuordnung zu weltgeschichtlichen Fragestellungen außerordentliches Gewicht haben. Dabei kristallisiert sich ein Problemfeld immer schärfer heraus: Was bewirken eigentlich die großen politisch-gesellschaftlichen Systeme des 20. Jahrhunderts und ihre vielfältigen Steuerungsinstrumente im räumlichen Gefüge der Staaten konkret? Wie tief gehen die Wirkungen? Was wird systemgeprägt, was bleibt system-unabhängig, behauptet sich vielleicht sogar gegenläufig? – Es wäre wichtig, wenn sich aus dem Bankrott deutscher Geopolitik stärkere Antriebe zur Erforschung derartiger Fragen gewinnen lassen würden.

Als letzte, allgemeinere Folgerung wäre zu bedenken, daß eine so zu Breite, Methodenvielfalt und Oberflächlichkeit neigende wissenschaftliche Disziplin wie die Geographie besonders wach, kritisch und nüchtern gegenüber allen ideologischen Versuchungen zu bleiben hat. Ausgesprochen gefährlich sind Strömungen, die im Gewande des Zeitgeistes und mit der Fahne des Neuen, Zukunftsweisenden daherkommen und schnelle Effekte mit hohem Glanz versprechen. Denn hier sind Versuchungen eines gutwilligen Opportunismus hineinverwoben, eines Opportunismus, der sich nicht nur an den persönlichen Ehrgeiz wendet, sondern – noch gefährlicher – die öffentliche Geltung, die Gesellschaftsrelevanz, die nationale oder soziale Nützlichkeit des Faches anspricht und damit auch ganz konkret Institute betrifft, Sachmittel, Stellenpläne, Aufstiegsmöglichkeiten, Anerkennung. Da ist, wie die Entwicklung der deutschen Geopolitik zeigt, mancher ansprechbar und anfällig geworden, der mit der Sache selbst wenig im Sinn hatte. Wir sollten aus der Geschichte der Geopolitik lernen.

WULFEN: SPACE FLEXIBILITY EXPERIMENTS IN A WEST GERMAN NEW TOWN

With 4 figures, 1 table and 5 photos

JOSEPH G. HAJDU

Zusammenfassung: Wulfen: Versuche der flexiblen Raumgestaltung in einer Neuen Stadt Westdeutschlands

Die Entwicklung von Wulfen am Nordrand des Ruhrgebietes ist gekennzeichnet durch die Erprobung einer Reihe von neuen städtebaulichen Konzepten, die sowohl die räumliche Verteilung der Flächennutzung in den Siedlungen und deren harmonischere Einpassung in die natürliche Umwelt als auch die flexiblere Raumgestaltung und Raumaufteilung in den Gebäuden betreffen. Diese Maßnahmen sind z. T. als eine Reaktion auf die kritischen Studien deutscher Sozialgeographen zu Fragen der Stadtentwicklung in der Bundesrepublik Deutschland während der Nachkriegszeit zu werten. Die Verlangsamung des wirtschaftlichen Wachstums hat die Vollendung des Projektes Wulfen verzögert, so daß Untersuchungen über die Reaktion der Bewohner noch verfrüht sind. Eine Analyse der neuen städtebaulichen Konzepte ermöglicht jedoch aufschlußreiche Einsichten in die Umweltwahrnehmung der Planer und ihre Vorstellungen von der Raumnutzung.

The decision in the late 1950's to establish the new town of Wulfen at the northern edge of the Ruhr industrial region was a response to the continuing northwards drift of coal mining. The appearance of pitheads north of the Lippe River meant that coal mining had entered the Münsterland, an important region of farming and light industry. If the southern section of this region was to avoid the urban sprawl which could easily accompany mining and industrial growth,

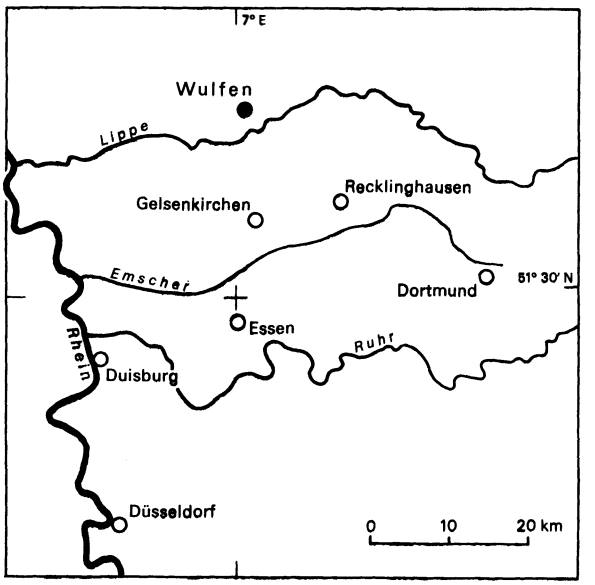

Fig. 1: Location of Wulfen

the planning of urban development had to occur (Fig. 1). It is in this context that the creation of Wulfen has to be seen.

The form which this planning took was strongly influenced by the nature of post-War German urban change. This was characterized by three phases. The first was one of rebuilding the heavily bombed cities. The second saw the creation of new urban areas which were distinct in nature and location, yet not physically as separate from existing cities as the British New Towns. The third phase has been highlighted by a fundamental reappraisal of post-War planning and building techniques accompanied by harsh criticism of some of the achievements of the previous phase of urban development (HAJDU 1979). A more detailed explanation of phases two and three is warranted so that the significance of the Wulfen project becomes apparent.

It became obvious by the mid-1950's that the rebuilding of the existing urban fabric would be insufficient to accommodate the increasing urban population. The return of economic expansion and the need to house over 10 million refugees from the territories lost to Poland and the Soviet Union, as well as the steady stream leaving the German Democratic Republic, meant that physical expansion of urban areas had to be contemplated (MELLOR 1978, pp. 151–154). Some of this took the form of spontaneous detached house-type urban fringe growth sanctioned by lenient municipal councils. However, the absolute scarcity of potential urban land in West Germany, as well as the traditional German sensitivity to landscape harmony quickly led to a fear that a *Zersiedlung der Landschaft* would occur, i. e., the creation of a formless landscape having neither the urbanity of a city, nor the harmony of the traditional German rural scene (HAIDER 1974). What eventuated was a large number of urban projects on the fringes of existing urban areas. These have usually been planned, managed and built under municipal supervision by a combination of building firms, a housing cooperative, and a bank of finance company. Often the Land or Federal Government had made cheap finance available in exchange for which a certain proportion of the home units were to be let at pegged rentals to people meeting the criteria for Government housing help. The size of the larger of these projects is roughly that of a regional centre or metropolitan suburb, e. g., Frankfurt-Nordweststadt (built for 45 000 people); Munich-Perlach (60 000); Nuremberg-Langwasser (60 000); Berlin-Märkisches Viertel (50 000). Smaller cities, such as Darmstadt, Freiburg and Bonn, have projects accommodating between 5 000 and 15 000 people. Their impact on the urban scene has been substantial. By the mid-1970's about a fifth of Munich's population lived in such *Neubausiedlungen*, or newly constructed settlements (HEIL 1974, p. 182).

They are characterized by large-scale integrated planning and the use of prefabricated building techniques. The building style is usually a mix of high-rise or walk-up apartments, row housing, courtyard houses and bungalow-style detached houses, the balance usually favouring the apartment. For example, in Nuremberg-Langwasser, it is 80% apartments and 20% semi-detached or detached houses (VOGEL 1969). Visually these new urban settlements combine architectural precision with geometric neatness. Where the site abuts or incorporates lakes or areas of forest, the planners have usually used this as an environmental feature. This is the case in Fankfurt-Gravenbruch, Bielefeld-Sennestadt and Darmstadt-Neu Kranichstein. Each new development has been planned to provide all basic services, some higher order services and a proportion of the jobs. In Munich-Perlach, for example, it is envisaged that ultimately only somewhat less than half of those gainfully employed will have to commute out of the area (*Neue Heimat Bayern* 1974). Usually underground or rapid transit train lines, express train or bus services link the new development with the established C.B.D. In some cases, residential densities have been staggered so that they reach their peak near public transport venues. A concept first introduced in Sweden, and found to result in a better balance between private and public transport usage (POPENOE 1977).

Nevertheless, the second half of the 1960's saw a wave of criticism of the details, if not the very concepts, of these new projects. Even if some of this ctiticism is arguably polemic and tendentious (*Der Spiegel*, 3 Feb., 1969, pp. 38–63), points made by a number of sociologists, environmental architects and geographers have had an impact. GREGER, an architect, writes of the desolation *(Trostlosigkeit)* of these new urban areas with their bleak building facades and standardized inflexibily designed flats (GREGER 1973, p. 23), BAHRDT (1973) deplores the weakness of the sense of community, and HEIL (1974) comments on the socio-economic problems caused by the intentional or unintentional mono-functional nature of these urban precincts. The high-rise facades supposedly give the new precincts an urban quality, whereas the extensive landscaping and green spaces give a sense of the garden city. However, GREGER (1973, p. 38) argues that the Neubausiedlung has the virtues of neither: their location and housing monotony deprives them of urban vitality, and the

formal landscaping can hardly be equated with the spaciousness and spontaneity of the countryside. The research of a number of German social geographers has provided considerable data and new insights into the spatial and environmental aspects of these large urban developments.

German social geography and the Neubausiedlung

The involvement of German social geographers in such research topics is not surprising as their concept of social geography would have inevitably led them to a consideration of the post-War phenomenon of the Neubausiedlung.

Close links with the géographie humaine of France have produced a German social geography which sees its aim as the study of the spatial imprint of human groups, human groups having a dimension which is not only economic but one of the values, lifestyles and social identity (HAJDU 1968). BOBEK (1948, p. 122) used the expression *Lebensformen*, or life forms to explain what to him was the focal point of study in social geography. The identification of social groups and the exploration of the spatial patterns which may result from the values and activities of such groups is what German social geography has sought to achieve. It is interesting to note this concern with social group identity and social group space in the context of the increasing interest shown by some Anglo-Saxon geographers in the individual's perception of his personal environment (for example, DOWNS 1970, TUAN 1975, PORTEOUS 1975). If the German perspective gives geography a sociological connotation, then the other has forged obvious links with psychology.

Given such sociological connotations, SCHRETTENBRUNNER (1970) considers the large city in terms of areas having different residential lifestyles, such as the commuter suburb, the satellite town, the slum reclamation district, the semi-rural upper-class belt etc. TEMLITZ (1975 a) in his definitive urban geography text uses a similar approach in which the mode of residential building construction and its pattern and architectural style form the basis of his identification of different residential areas. The Neubausiedlung or planned residential area of the last two or three decades is seen as a separate urban environment with its inhabitants having their own lifestyles and problems. In another work, a case study of a new estate on the outskirts of Münster, TEMLITZ (1975 b) relates his analysis of the home types and their environmental setting to the results of a survey on residential satisfaction. NIEMZ (1970) carried out a similar assessment in the Gravenbruch Neubausiedlung outside Frankfurt, a development which was found to be unusually successful because it was surrounded by a spacious municipal forest. In another study, the Neu Kranichstein estate north-east of Darmstadt, the element of environmental amenity, in this case linked to home type, was found to be the reason for residents' satisfaction. Provided their new homes were not close to throughroads and had access to open space, residents of courtyard-style and bungalow-style homes showed themselves to be most satisfied. Conversely, the larger the number of units in a resident's apartment block, the less satisfied he tended to be (FRIEDRICH 1978, pp. 154–155).

Other geographic research has focused on the distinct socio-economic characteristics of the residents of these newly-developed areas. They were set apart by the above-average percentage of children and the absence of all relatives except the members of the nuclear family (VOGEL 1969). The inability of the estate to adjust to the changing space and amenity needs of the residents was another theme that was researched. Studies by geographers from Bremen and Ulm reveal a rigidity of land-use planning, apartment design and amenity type which could not be adapted to the changed needs of residents as their children left home or they aged (KOB et al. 1972, SCHAFFER 1968). FRIEDRICH in his study of two new projects outside Darmstadt went as far as postulating a three-phase model of residents' satisfaction with their home and outside environment. Attitudes were postulated as a function of duration of residence. There was an initial setting-in phase, which was characterized by a preoccupation with the interior of the home. The second was an orientation phase, in which the relationship between the home and its outside environment was being assessed. Finally, an assimilation phase, where there was maximum interest in neighbourhood social contact. At each phase, attitudes could be „positive", „indifferent" or „negative". This, in turn, would affect the desire for further assimilation, resignation or a movement out of the area (FRIEDRICH 1978, p. 183).

For, as PORTEOUS argues, the home should give the individual the three territorial satisfactions of identity, security and stimulation. The three are interlinked as the „personalization of space is the means by which stimulation is achieved and security assured" (PORTEOUS 1976, p. 383). Identity and stimulation for the home owner were often hard to achieve in the preplanned, standardized urban estates studied by the German social geographers. The scope for the individual to manipulate the external appearance of the high-rise dwelling was non-existent and so, from the outside, his home space was generally not identifiably his, nor did the standardized design and layout give much individual stimulation. Furthermore, by the very nature of the design, the security of private defensible space in the high-rise block does exist beyond the walls of the apartment. At the next scale of human living space, the neighbourhood, the need for such psychic satisfactions is just as important. The neighbourhood has to be clearly delineated so as to clarify the concept of what is the „resident's own" (HESTER 1975, p. 20). Its value depends on the ability of the resident to identify with it, which in turn will be a function of its design and its ability to meed the needs of its users.

The field research of the German social geographers mentioned earlier all pointed to weaknesses of design, layout and environmental insensitivity which made the general level of residents' satisfaction less than what the authorities would have expected. The importance of the Wulfen experiment lies in that its planners, developers and the Government have made a point of admitting the relevance of the earlier research findings on other urban development schemes in West Germany and have publicized the claim that Wulfen is

„different"[1]. As the Wulfen project is only about half complete, the analysis which follows will aim to show the degree of awareness shown towards the need to eliminate the faults identified in earlier urban projects, rather than the response of the new residents of Wulfen to the living environment which is being created for them. Such a study awaits the completion of the whole project.

The Wulfen experiment

In 1958, the mining company Mathias Stinnes AG tapped a 1 000 m deep coal seam and opened a pithead near the village of Wulfen. This was to be the first phase of a large mining development which would draw thousands of people to the area. Wulfen village with around 3 000 people could easily find itself overwhelmed by the resultant ad hoc urban development. This was deemed to be undesirable and so two alternatives for planning urban growth were identified: the creation of a mining settlement with a homogeneity of residents and housing styles, rather like those built in the 19th and early 20th century on the fringes of cities such as Duisburg, Essen and Dortmund; or, the creation of a new town which would have the job opportunities, services and housing types to become a community with a balanced socio-economic mix. Rising affluence and changed social concepts had made the deficiencies of the Ruhr mining communities apparent, so the second alternative was chosen.

The creation of such a new community required planning and coordination. The mining company, the regional planning organization for the Ruhr (Siedlungsverband Ruhrkohlenbezirk), two local councils, and a bank, Westdeutsche Landesbank Girozentrale formed a development corporation. This corporation, called Entwicklungsgesellschaft Wulfen mbH, was established in 1960. Grants from the State Government, as well as special purpose funding from Bonn, enabled the corporation to proceed rapidly. A site of c. 1 000 ha was chosen, a competition for a concept plan held, and developmental targets set. However, fluctuating demand for coal and the economic downturn of the 70's have led to a downward revision of targets; Wulfen was to have 50 000 people by 1980; the actual trend of population figures has been more modest, 1963 – 3 784; 1970 – 7 845; 1980 – 16 200; the new target is 30 000 by 1990. The aim was to ensure that no more than a third of the jobs should be in mining. The present balance between the 400 employed in the coal mine and the 2 000 working in the 20 new small industries as well as the services, shows this to have been achieved. At the same time, there is considerable commuting mainly to the large chemical complex in nearby Marl-Hüls (Cordes a. Glatthaar 1976, p. 111). A balance between local employment and commuting to nearby centres is an aim of the planners.

It is now proposed to provide a brief analysis of three aspects of the Wulfen project. These can be seen as a response to such earlier criticisms of urban projects as environmental insensitivity, lack of meaningful neighbourhoods and stereotyped home units with which the residents could not identify. The three aspects are: the concept plan, the issue of diverse residential home and population densities, and finally, the experimentation with design and building techniques to give residents varied and flexible arrangements of living space in keeping with the individual and his changing needs.

The concept plan

The winning design shows the influence of the Garden City Movement as well as of the neighbourhood community concept. However, in its awareness of the given terrain, drainage and pre-existing vegetation, the plan was a precurser of the environmental sensitivity of the 70's. The built-up area has been locked into a pattern determined by the location of four areas of forest and a forked creek which bisects the site along a N-S alignment. The new city centre is next to the fork in the creek, north-east of the old Wulfen village now to be incorporated into the new development (Fig. 2). The creek valleys are to form the basis of a green web by which the built-up areas have been delineated. As mentioned earlier, surveys had shown that access to open countryside, parks and recreational venues was one of the strongest factors making for residents' satisfaction in such new developments, hence, a system of walking paths was planned to link the residents' homes with both the outlying forests as well as the central and peripheral conservation and recreational spines. This dense web of foot and bicycle paths has been superimposed on the arterial road system in which each through-

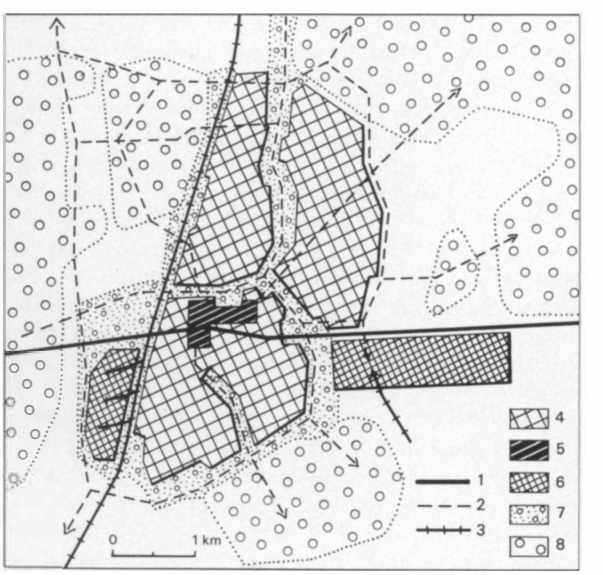

Fig. 2: Wulfen: Outline plan
1 = Built up area, 2 = City centre, 3 = Industrial zone, 4 = Park and woodland, 5 = Forest, 6 = Arterial road, 7 = Walking paths, 8 = Railway

[1] For example, a recent publication of the Wulfen Development Corporation is titled, „Living another way: the example of the New Town of Wulfen" (*Entwicklungsgesellschaft Wulfen* 1980).

way is about 400 metres from the other, with cul-de-sacs forming the accessways to the garages and parking places of individual residents. The pathway network is taken under or over the arterial roads and frequently merges into small playgrounds, parks or conversation zones to create a diversity of communal activity and environmental areas. No home was to be more than ten minutes walking distance from greenery or open space. At the same time, the paths enable the residents to walk to their neighbourhood amenities as well as to the city centre.

As opposed to such seperation of the motorist from the pedestrian, the most recently developed Wulfen neighbourhood has experimented with the concept of the „residential street". Here the pre-motorcar multifunctional character of streetspace is revived through the abolition of the distinction between sidewalk and carriageway, the insertion of protruding streetscape elements and traffic humps. These force vehicles to travel slowly and so enable the pedestrian, playing children and cyclist to coexist on terms of greater equality with the motorist.

Wherever possible, the range of plant life indigenous to the district was retained (DAHMEN a. DAHMEN 1980, p. 29). At the same time, some variation in landscaping has been planned so that the vegetation would form one of the elements which structures the various groups of residential buildings. Hedges, tree plantings or leafy walkways have been used to both distinguish neighbourhoods from each other as well as to act as the elements which link them visually and functionally. Tight clusters of high-rise flats create an urban skyline, whereas single storey houses, half hidden behind clumps of trees, give a semi-rural impression. Such differences are exaggerated to give each neighbourhood as distinct an appearance as possible (Photo 1). This distinctness of building clusters is further highlighted by the siting of buildings over five storeys on rises. Those which are lower are in the slight hollows the contour maps identified for the planners (HEISS 1967). As will be mentioned in the next section, such heterogeneity in neighbourhood planning is matched by the variety of home types found within the apartment blocks and house clusters. This is a response to the negative perception of the visual environment had by many residents of other post-War developments in West Germany, as well as to the limitations imposed by a uniform type of residential accommodation on the range of occupants who can be housed in them.

As a final point, the Wulfen plan has consistently attempted to create a greater variety in the use of residential space. The stark, monotonous facades of earlier West German urban projects were to be replaced by a variety of residential building types within which individual home units were to be differentiated one from the other as much as possible. As critics have indicated, one of the major failings of post-War urban planning has been the lack of identity of the individual home within the high-rise or medium density development. To achieve such identity, an increased range of different apartment types within a single building is required, as well as the personalization of access areas to apartments and the provision of private open space for each resident (KIRSCHENMANN a. MUSCHALEK 1980, p. 59). The manipulation of residential densities is crucial to the achievement of these aims and density management has been one of the most imaginative aspects of the Wulfen scheme.

Residential density

The average density of residences has been kept below a 50 home units/ha limit. However, considerable variation among the neighbourhoods has been achieved. This density variation was planned in relation to the location of the district and central shopping areas as well as the terrain and landscape features of the site. Apartment blocks of five to eight storeys form a curving ridge line paralleling the course of the Mühlenbach Creek, with the low-rise flats and single storey homes forming a linking feature between them (Photo 1). Closer inspection reveals a more complex pattern of density gradation. Low-rise detached and semi-detached homes penetrate into all neighbourhoods. Interwoven with them in some areas are medium height residential structures which, in turn, are replaced by the high-rise dwellings at chosen sites in the urban development (Fig. 3). It is therefore possible to identify neighbourhoods with a mixture of low-rise and medium-rise dwellings, as well as neighbourhoods in which all three homes types are juxtaposed. Each group of 500 to 1 000 homes aims to provide the full range of home sizes and types. Thus the variations among the residential neighbourhoods are based on both differences in siting and landscaping as well as the differences in the mix of residential densities and home types.

The table which follows summarizes the gradation of home types and vertical and horizontal dwelling unit densities (Table 1).

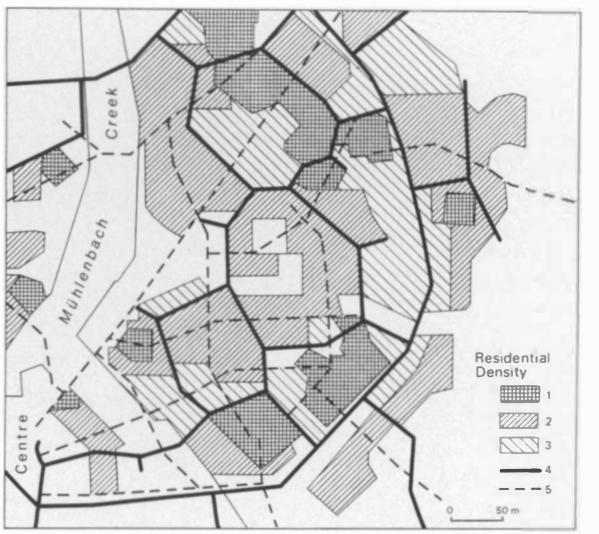

Fig. 3: Wulfen Barkenberg: Residential density concept
1 = 5–10 Storeys, 2 = 2–3 Storeys, 3 = Single storey, 4 = Road, 5 = Walking path

Photo 1: Wulfen-Barkenberg looking north-east. The Metastadt complex is in the left foreground with Finnstadt behind it.
(*Source:* M. Frank. Freigegeben vom Reg.-Präs. Münster Nr. 1948/78)

Table 1: Wulfen: Home types and residential densities

Home Type	No. of Storeys	% of Total	Home Unit Density/ha
1	1	2	8
2	1	8	13
3	1–2	8	25
4	2	7	26
5	3	10	39
6	3	15	48
7	3	5	51
8	3	5	56
9	3	15	62
10	6	5	67
11	8	10	67
12	3–8	10	67

Home type key:

1 = Detached house of individual design,
2 = Detached house of standardized design with garden,
3 = House with courtyard garden,
4 = Semi-detached cluster or row houses,
5 = Apartment block with garden areas for ground floor home units and garden usage for flats above,
6 = Three-storey town houses with garden,
7 = Ground-floor home unit with garden and a double-storey home unit with terrace above,
8 = Ground-floor courtyard home with apartments above,
9 = Apartments with terraces or balconies,
10 = Ground-floor courtyard house with apartments above,
11 = As for 10, but greater vertical density,
12 = A combination of types 5 to 9.

Source: Adapted from EGGELING 1965, p. 26.

Two points should be noted from this table. Firstly, by New World suburban standards, the density spread is weighted in favour of medium to high density homes. Only a quarter of the housing can be considered of low density. Such a pattern of residential densities is close to average for contemporary European developments. Secondly, the diversity of home types seen within the constraints of the per ha density guidelines is the aspect of space usage in which Wulfen has tried to respond to some of the criticisms of other post-War German urban projects. Thus, clusters of semi-detached, double storey, row houses, with c. 130–140 sq. metres of living space form neighbourhoods which alternate with three to eight storey apartment blocks containing home units of 70–120 sq. metres size and single storey courtyard homes with up to 180 sq. metres of living space. Each cluster of residential building types is the work of different architects and landscape designers, all developed within guidelines set by the Wulfen Development Corporation. This concept of integrated unit development, which aims at environmental harmony within a neighbourhood, but diversity from one urban precinct to the other is also seen in the development of the Wulfen city centre. Here, a low-rise group of 120 town houses have been blended with shopping arcades, offices, professional suites, and a community centre. Their focus is a market place on the shores of the Mühlenbach Creek. Construction commenced in 1979 and the aim has been the creation of a low density multifunctional town centre with a distinctive identity and having a flexible use of space (WITTWER 1979).

However, it is not only flexibility of space usage between and within urban precincts which the Wulfen planners have seen as a contribution to the creation of a diverse environment, but also the flexible use of space within an individual residential building was deemed to be important for the distinctive identity of the individual home and the provision of living space to suit the needs of a variety of people. One of the most interesting of such projects is the Finnstadt or Finnish town apartment complex. This cluster of buildings varies in height from two to seven storeys and was given its name by the nationality of its architect. The complex is characterized by a stepped pyramidal silhouette. This gives increased flexibility of apartment layout and the possibility of providing home units with a variety of private open spaces in the form of a balcony, terrace or courtyard (Photo 2). The following is an example of space allocation in a five-storey Finnstadt building. The building contains 21 home units; four of these have one bedroom, twelve have three bedrooms, four have four bedrooms and one has five bedrooms. All have one or two areas of private open space. To strenghten the identity of each home, the locations of home unit entrances are kept as seperately as possible. The variations in the vertical, as compared with the horizontal allocation of private living space, are also aimed at, providing a sharpened perception of the individual home within a high density complex. Fig. 4 is a simplified diagram of the variety of private living space allocations which were made possible through a use of both the vertical and horizontal dimensions of a high-rise building. On home units where the vertical dimension has been utilized, private indoor stairs have been provided which also help to strengthen the identity of the

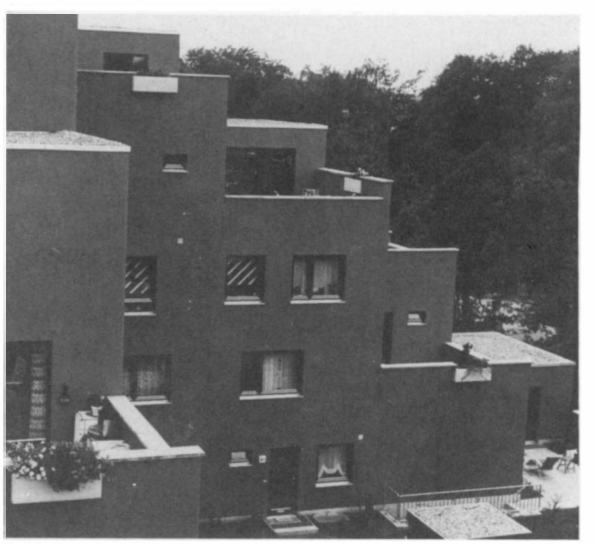

Photo 2: Finnstadt (*Source:* H. MELLES)

domestic space[2]. The pyramidal form enables many home units to have spacious private terraces. Such a variety of home unit sizes and shapes facilitated the accomodation of a broader cross-section of socio-economic groups within the one building. This varied design and space allocation shows a sensitivity to the relationship between the planning of domestic space, building design, and the range of needs had by a broader cross-section of the community. It can thus be said to counter widespread criticism of visual monotony and socio-economic imbalance found in many high-rise urban developments of the last generation.

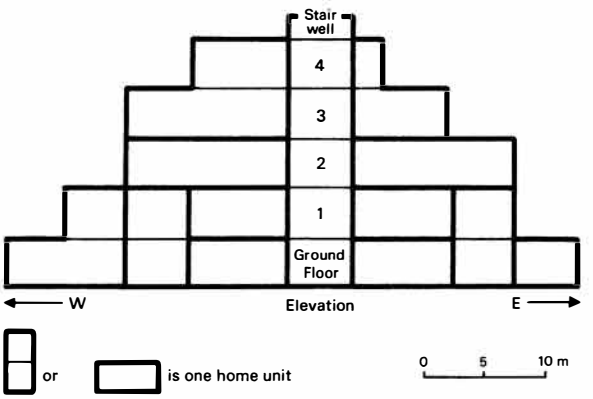

Fig. 4: Finnstadt apartment building

Flexible building techniques and domestic space

Preliminary planning for Wulfen identified a number of problems which, it was felt, would be of growing significance as the new community grew and matured. These were, the demand for more living space as affluence increased, the need for changes in the internal subdivision of the home as children grew, left home and the parents aged. The types of facilities needed in the semi-public domain around the home would also have to be adaptable to the changing needs of the residents. Finally, as Wulfen's population increased there would be a commensurate increase in the space requirements of non-residential services in the town centre. These services would inevitably need to spread into the adjacent residential areas, therefore a design which would facilitate flexibility of usage would be of advantage (*Entwicklungsgesellschaft Wulfen* 1978, p. 5). As a response to these problems of spatial flexibility, special funding was provided in 1973 by the Land Government of Northrhine-Westphalia and the Federal Ministry of Regional Planning and Construction to develop two experimental housing projects.

The first of these is called Metastadt or Meta-town. This building was constructed in 1973–74 and contains 100 apartments as well as a range of shops, professional suites and a kindergarten on the lower floors. It was envisaged as an urban structure facilitating change, both in the pattern of functions and the layout of space. To achieve this, the support structure of the building and the fill elements were separated. There is a steel and reinforced concrete skeleton with a number of service towers which contain the lifts, staircases, wires and pipes. Into this structure are bolted the basic prefabricated 4.20 m housing cubes (Photo 3). These cubes are self-supporting and virtually unlimited numbers can be bolted together vertically or horizontally. Bolted together vertically, Metastadt cubes can span distances of up to thirty metres without further support. The irregularity of the 108 unit Metastadt facades show the flexibility of space allocation which these housing cubes have made possible (Photo 4). The ground and first floor already contain shops, offices and some professional services, and as the adjacent centre of Wulfen needs extra space for non-residential functions, conversion of residential space for other uses will be easily achieved.

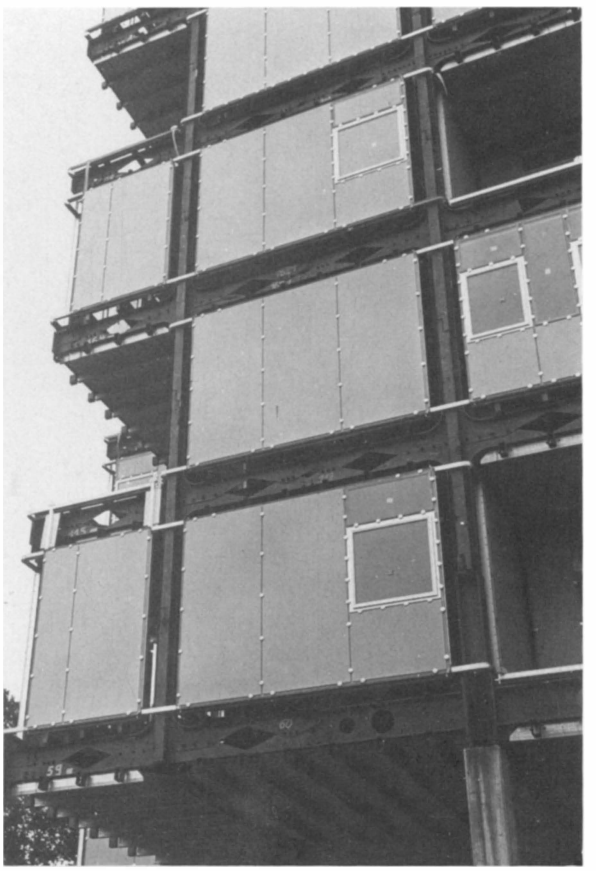

Photo 3: Newly bolted Metastadt cubes in the building frame (*Source:* H. Krehl and Partner)

The second of the experimental housing projects is called Habiflex. It consists of an open-plan service tower around which forty housing units are grouped. The texture of outer walls is mainly of concrete, but it also has large areas of glass.

[2] Fig. 4 does not show the relative sizes of the home units accurately. To achieve that a N–S elevation diagram would need to be drawn, as well as that, all internal walls would have to be shown.

Photo 4: View of Metastadt
(*Source:* Entwicklungsgesellschaft Wulfen)

The second highest floor consists of a number of apartments with timbered external walls. These sit on the lower structure of Habiflex as if they were separate bungalow houses (Photo 5). The effect of its varied surfaces and irregular facades is to give each home unit a stronger identity than is the case in most conventional high-rise apartment blocks. The internal walls are made of leightweight elements whose position can be changed at will. This applies also to the wood and glass elements of the balcony, so that, for example, the balcony can be added to the living area in winter. As the family situation changes or new tenants arrive, the total space of the home unit can be redivided to suit the needs of the new residents, e. g., the area of living space can be decreased to create more bedrooms, or vice versa. The flexibility of space usage in these buildings has been seen as opening up major possibilities for change in the urban environment of the European city (*Die Welt,* 15 May, 1975).

As against this, some criticism by residents points to the inadequacies of present building techniques for such revolutionary concepts, as well as the general problems of maintenance in such large apartment blocks (*Westfälische Allgemeine Zeitung,* 4 Oct., 1980). At the same time, the concept of space flexibility so radically tried in the Metastadt and Habiflex projects have been incorporated in the new medium density neighbourhoods being developed in the 1980's to the south-west of the Wulfen city centre. As such, they have provided a response to the criticisms of visual monotony and spatial uniformity levelled at many of the large-scale post-War German Neubausiedlungen.

Conclusion

Wulfen is only one of the number of post-War Neubausiedlungen built in post-War West Germany. Its interest as a focus of geographic study lies in that its planners and developers have attempted to seek answers to some of the criticisms of such types of urban developments which researchers

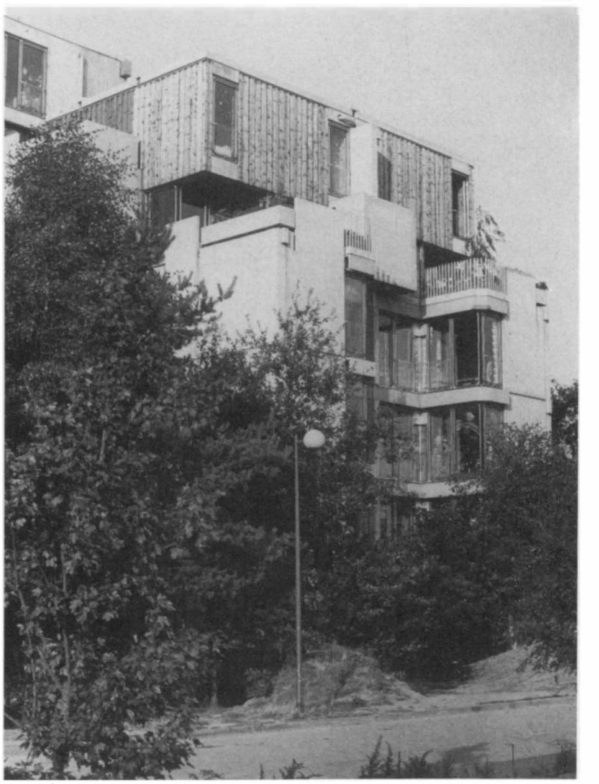

Photo 5: Habiflex. Note the removable nature of the glass panels around the enclosed balconies.
(*Source:* H. Krehl and Partner)

had identified. Findings such as visual monotony, environmental insensitivity, socio-economic imbalances, spatial rigidity and poor infrastructure were the key points to be revealed by the surveys of these urban projects. These, Wulfen is attempting to counter through a concept plan which is inserting the new community into the given physical environment to which all residents have easy access. Also, by creating greater visual diversity within the constraints of medium to high density development, and by providing a variety and flexibility of domestic living space through the provision of a range of home types, the individual resident is encouraged to identify more closely with his urban environment than was possible within the large geometric urban constructs of the previous decades. Such flexible space usage enables the planner to satisfy the needs of a diverse range of people, yet the new urban environment of which they are a part unites them as an identifiably distinct social group. Hence they are an object of study which has been central to the research of German social geography.

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DIE DEUTSCHEN ALPEN – PROZESSABLÄUFE SPEZIELLER AGRARSTRUKTUREN

Mit 8 Abbildungen (z. T. als Beilagen V–VII) und 8 Tabellen

Karl Ruppert

Summary: The German Alps – Special agricultural structures and their development

The paper deals with the development of special agricultural structures in the German Alps. The differentiation between the agriculture in the Allgäu region and in Upper Bavaria is emphasized, and the tendencies leading to the shifting of the main milk production areas to the edge of the Alps, and even to the pre-alpine regions, are demonstrated. The situation of the alps (alpine pastures) is dealt with, and it can be shown that this special form of pasture is still important and, contrary to frequent opinion, in no case decreasing. The problems connected with the separation of wood-land and pasture-land, a special form of high-alpine land consolidation, are discussed, and lastly a short report is given on the present situation of the pasture economy in the different alpine countries, together with remarks on measures taken in order to preserve the cultural landscape.

Die Raumentwicklung in den deutschen Alpen hat durch die Wissenschaft, insbesondere auch von seiten der Öffentlichkeit im letzten Jahrzehnt zunehmende Aufmerksamkeit erfahren. Die außerordentlich starke, noch anhaltende Wertsteigerung eines Bereiches, der durch lange Zeitspannen nie den Gunsträumen Mitteleuropas zugehörig war, begleitet von verschiedenen Formen der Flächenkonkurrenz, rief schon bald nach einer planerischen Ordnung. Ansätze dazu sind etwa in dem vorgezogenen Teil des Bayerischen Landesentwicklungsprogramms (LEP) über die „Erholungslandschaft Alpen" zu sehen, der bereits 1972 in Kraft getreten ist. Die Regionalpläne für die alpinen Planungsregionen 16, 17 und 18 stehen kurz vor der Vollendung (vgl. Ruppert 1980). Verlautbarungen über Ziele der baulichen Entwicklung sowie die Durchführung zahlreicher Raumordnungsverfahren