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Housing Bulletin

Human Settlement in Switzerland

Spatial Development and Housing

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Preface

This publication is the updated and completely revised version of a report published in 1978, 1988 and 1996 in the Housing Bulletin, a series on the subject of housing. It provides an overview of the current situation regarding the built-up environment in Switzerland in the context of this country's culture and politics. Swiss settlement policy is determined by the country's geography, demographics and political system. It is small and densely populated, with rapidly expanding urbanised areas. A large proportion of the population lives in good homes reflecting widespread well being and a high standard of living. To provide low-income households with affordable, good-quality homes, the government subsidises and promotes housing at various levels.

The two chapters on spatial development and housing highlight various aspects of the country's built-up environment and housing. Certain issues particularly representative of more recent developments are presented separately.

This report is published in German, French and English for people interested in spatial development and housing, both in Switzerland and abroad, thereby meeting the requirements of providing information on Swiss policies concerning the built-up environment, which Switzerland has pledged to fulfill as a member of the United Nations Economic Commission for Europe (UNECE).

Federal Office for Housing FOH

Spatial Development

The mountainous country of Switzerland is one of Europe's smallest states. The most densely populated area is the *Mittelland,* i.e. the lower-lying land between the Alps and the Jura. Fifty years ago about half the Swiss population lived in conurbations – a rate that has since increased to three quarters. Fully eighty-two per cent of all workplaces are located here. In the European context, the urban centres of Zurich, Basel and Geneva / Lausanne have acquired great economic relevance. In parallel with this development, built-up areas, individual road traffic and infrastructure costs have all expanded and increased greatly. The burden on the environment has increased and the country's tourist capital – its beautiful landscapes – has also suffered a great deal.

The revised Federal Constitution of 1999 gives greater weight to two issues crucial to spatial development, i.e. the obligation to ensure sustainable development, and – a novelty – the cooperation of the Swiss government with cities and conurbations, as well as the co-operation among them, encouraged by the government.

Due to the country's small size, institutional structures and its historic political and cultural diversity, spatial development policy faces the challenge of finding sustainable solutions to large-scale, trans-regional problems. The Spatial Development Concept for Switzerland *(Raumkonzept Schweiz)* presented in the 2005 report by the Federal Office for Spatial Development has launched the debate on various strategies, possible solutions and courses of action that all actors should implement jointly.

Cultural and political context

A densely populated small state

The surface area of 4.1 million hectares (just under 16 000 sq miles) makes Switzerland one of Europe's small states. Located at the heart of Europe, it is neither a homogenous nor a clearly defined cultural area, on the contrary: one of the country's characteristics is a complex overlap of linguistic regions, religious denominations, urban centres and peripheral areas. Its four, largely linguistically defined, major regions share many features with the neighbouring countries, with which they maintain close relationships.

Because Switzerland straddles the Alps, it is a mountainous country with a low proportion of productive terrain and severely restricted land exploitation. Mountains and lakes cover about one quarter of the entire surface area, while forests and alpine meadows make up forty-four per cent. Just thirty-one per cent of the total surface area is suitable for human settlement. The most productive region is the relatively flat terrain of the *Mittelland* between the Jura and the Alps. Amounting to a mere twenty-seven per cent of the country's surface area, it holds all the large cities, centres of industrial production and services, as well as main road, rail and air transport arteries. The Swiss *Mittelland* is one of Europe's most densely populated regions.[1]

Linguistic diversity

The four national languages, i.e. German, French, Italian and Romansh, and their respective dialects, express Switzerland's linguistic and cultural diversity along fairly well defined geographical boundaries: the Germanic dialects spoken in the central, northern and eastern parts of the country have the greatest diversity and distribution. French dominates Switzerland's west, while Italian is predominant south of the Alps. The fourth official national language is Romansh, spoken only in south-eastern Switzerland, i.e. parts of the canton of Graubünden. The smaller the linguistic area, the less likely that a language will be used as the only language in everyday use. This is the canvas on which a characteristically Swiss plurilinguism has evolved.

Non-national languages have been gaining ground for some time; soon they will reach a proportion of ten per cent, of increasingly and predominantly Slavic origin, at the expense of Latin-origin languages. The increase of non-national languages is due to demographic shifts among immigrating and resident alien and Swiss populations.

Religious denominations – side by side

Roman Catholics and Protestants (including free churches) are the two major religious communities in Switzerland; the Roman Catholics have a slight majority due to demographic changes and immigration from Catholic countries.

Spatial distribution of the two predominant confessions still largely coincides with the situation just after the Reformation. On closer consideration, however, it becomes clear that in economic centres with high immigration rates these boundaries have become blurred, and that the originally predominant confessions may even have been relegated to minority status (as in Geneva). Moreover, since the 1990s, two clear trends can be noted, i.e. a marked increase of individuals with no religious confession (twelve per cent), and growing numbers of Muslims and Orthodox Christians.[2]

Direct democracy and federalism

Switzerland is a federation of twenty-six states, the so-called cantons. The country's political structure is federalist and breaks down into three different levels: governmental, cantonal, and municipal.[3]

The Swiss call their federal government *'der Bund'* (other frequently used terms are *Eidgenossenschaft* or Confederation[4]). Its powers – in particular foreign policy and security, customs and finance, national law and defence – are defined in the Federal Constitution. Any tasks the federal government is not explicitly accountable for automatically fall into the domain of the next lower level, i.e. that of the cantons.

The cantons are the original states which joined in the Confederation in 1848, to which they delegated certain sovereign powers. Each Swiss canton has its own constitution, parliament, government and courts of law. Cantonal parliaments vary in size, from 58 to 200 seats; cantonal governments consist of five, seven or nine members.

All cantons are divided into political municipalities – 2 761 at present, a number which has been in decline owing to municipal mergers. Approximately one fifth of all municipalities have their own parliament, while four fifths practice direct democracy, with decisions being taken in municipal assemblies. Apart from responsibilities attributed to them by the national and cantonal governments, municipalities also exercise power in their own right, with extensive autonomy as regards schools, social welfare, energy supply, road maintenance, municipal spatial planning, tax rates, etc. Since each canton defines the extent of autonomy of its municipalities, this varies considerably from one canton to the next.

Direct democracy is a singularly Swiss phenomenon, with much more extensive voter participation than almost anywhere else. The country's long democratic tradition, comparatively small size and population, as well as high literacy and diversified media are crucial elements in the smooth running of this particular form of government. Every accountable Swiss citizen older than eighteen has both passive and active voting rights: he or she may both vote to elect, and present themselves for election to office. A mandatory referendum, i.e. a popular vote, is required to approve any changes to the constitution and accession to certain international organisations. Voters also have the right to approve or reject decisions passed by parliament. Federal legislation, federal resolutions and state treaties without statutory limitation are subject to the facultative referendum if at least 50 000 members of the electorate, or eight cantons, submit a petition to this effect within 100 days after publication of the decree.
Under the direct initiative, Swiss citizens may submit a petition to demand a popular vote or plebiscite on a constitutional amendment. For such a vote to occur, the petition must be signed by 100 000 members of the electorate within 18 months of the petition's launch. The phrasing of such a referendum may be quite vague, or – and this is much more common – formulated as a properly edited amendment whose wording may not be altered by either the parliament or the government.

Settlement structure

Population growth

In the past ten years the population of Switzerland has increased by 0.5 per cent each year, reaching just under 7.5 million in 2005, of which 1.5 million, or twenty-one per cent, were foreign nationals. The rate of population growth in past years has been one of the highest in Europe. This is largely due to immigration, with more and more people originating from beyond Switzerland's neighbouring countries. The vast majority of the foreign population, however, was born in Switzerland, the only difference between them and their Swiss neighbours being their foreign passport.[5]

Urban sprawl

The surface area of Switzerland extends some 350 kilometres from east to west, and some 220 kilometres from north to south (or 29 730 sq meters).

Both geographically and topographically the heart of the country is dominated by three topographically distinct natural areas. The Jura range forms the country's north-western border while the Alps with their great differences in altitude straddle the southern border. Between the Jura and the Alps lies the rather flatter *Mittelland*.

Topography, the mountains especially, severely influences and restricts the way settlements are built and distributed throughout Switzerland. This is why various uses, such as living and working, agriculture, transport, leisure activities, etc., compete with each other on about one third of the total surface area. The rapid expansion of settlements and roads has left deep scars in the landscape.

In the period between the past two surveys for the land-use map *(Arealstatistik)*[6], settlement and circulation areas increased by thirteen per cent, or 32 650 hectares (some 126 sq miles), to approximately 279 000 hectares (1 077 sq miles). Nowadays, each individual requires an average area of 397 square metres, i.e. 127 square metres for traffic and 112 square metres for residential use. Every second nearly one square metre of land is being built over. In other words, the built-up environment is expanding considerably faster than the population, which increased by just nine per cent over the same period of time. The reasons for this growth are the increasing number of households, rising personal living-space requirements and the construction of large numbers of detached houses for one or two families, which consume a lot of land. Urban sprawl largely occurs at the expense of arable land. Its reduction is most striking in the *Mittelland,* one of Europe's most densely populated areas, which absorbs over half the total Swiss increase in the built-up environment.

Urban growth has shifted from urban centres to peri-urban and rural areas, where residential use has consumed vaster tracts of land than in cities. Particularly rapid growth has been observed in areas within easy reach of conurbations because of their popularity among people working in or near the city centres.

Urbanisation

Urbanisation processes are occuring all over the world. Almost three quarters of the European population live in the EU's urban areas;[7] this proportion is likely to increase in the future.

Urbanisation in Switzerland has increased significantly over the past decades[8] with just under three quarters of the resident population living in urban or peri-urban areas, as against about one half in the 1960s. However, urban areas are focal points not just of the population but of

Focus: Construction outside designated building areas (DBAs)

One of the main concerns of urban planning in Switzerland is the distinction between land designated for construction and land where construction is banned. Since inception of the Federal Law on Land-use Planning in 1980, therefore, construction outside DBAs has been restricted by precise regulations and only agricultural and buildings tied to certain locations are tolerated. However, at a rate of approximately thirty per cent, a considerable number of buildings are located outside DBAs. These are not only agricultural, residential and utility buildings, but also the scattered settlements and hamlets characteristic of certain regions, as well as infrastructure such as pylons for power lines and communication networks; army buildings and facilities; and leisure-time and recreation facilities. The settlement area outside DBAs amounts to 105 000 hectares, a little over one half of which is used up for traffic.

Approximately ten per cent of all residential buildings are currently located outside DBAs. It is striking that only a small – and decreasing – number of these buildings are occupied by people fully or part-time employed in agriculture: while in 1990 their rate was forty-three per cent, in 2000 it had dropped to thirty-nine per cent. At the same time, an increase in residential buildings has occurred outside DBAs: an increase by 3.7 per cent from 1990 to 2000, below average in comparison with the total increase of buildings and housing, is still remarkable considering demographic developments outside DBAs. In the same decade, the population living outside DBAs decreased by more than six per cent, while the total population of Switzerland increased by six per cent. In other words, outside DBAs fewer and fewer people live in more and more buildings. This is a fact also reflected in per-capita living space utilisation which, in the same decade, increased significantly outside DBAs, a development diametrically opposed to the main concerns of urban planning, i.e. the distinction between DBAs and land where construction is banned to avoid urban sprawl.

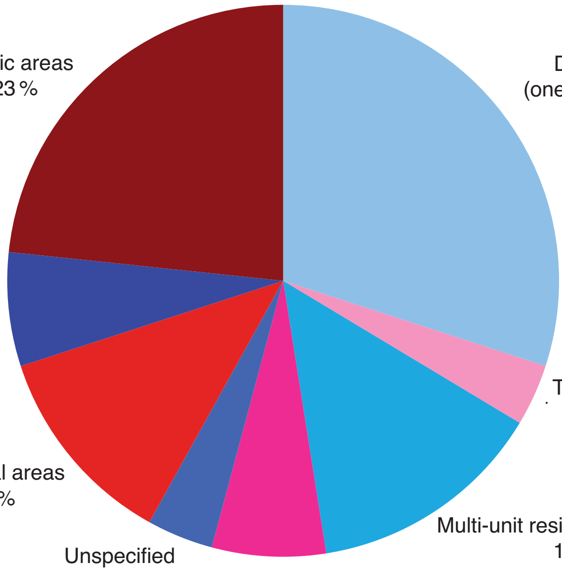
The federal parliament has been discussing a number of proposals demanding a revision of decrees and regulations concerning construction outside DBAs. The current Land-use Planning Act and its detailed and restrictive regulations are viewed as centralistic and often inadequate to the diversity of rural forms of settlement. Lacking acceptance, they are not being implemented properly.

That is why the federal government is currently defining a new concept concerning construction outside DBAs intended to reflect more accurately the diversity of our country, and to allow the cantons more flexibility. The new regulations should take better account of characteristics of cultural landscapes and their prospective development, and harmonise better with desirable spatial development. However, the main focus of the new legal situation will remain on the strict limitation of new builds outside DBAs in order to control urban sprawl.

Sabine Mühlinghaus, Federal Office for Spatial Development

References: Bundesamt für Raumentwicklung, *Raumentwicklungsbericht 2005,* Bern 2005. – Bundesamt für Raumentwicklung, Bundesamt für Statistik (ed.), Daniel Hornung, Martin Lindenmann, Ueli Roth, *Gebäude, Wohnungen und Bevölkerung ausserhalb der Bauzone,* Bern 2005.

Settlement area increase from 1979/1985 and 1992/1997, according to utilisation categories



economic activities, and currently account for eighty-two per cent of all workplaces. They have increasingly become the powerhouses of the country's economic, social and cultural growth.

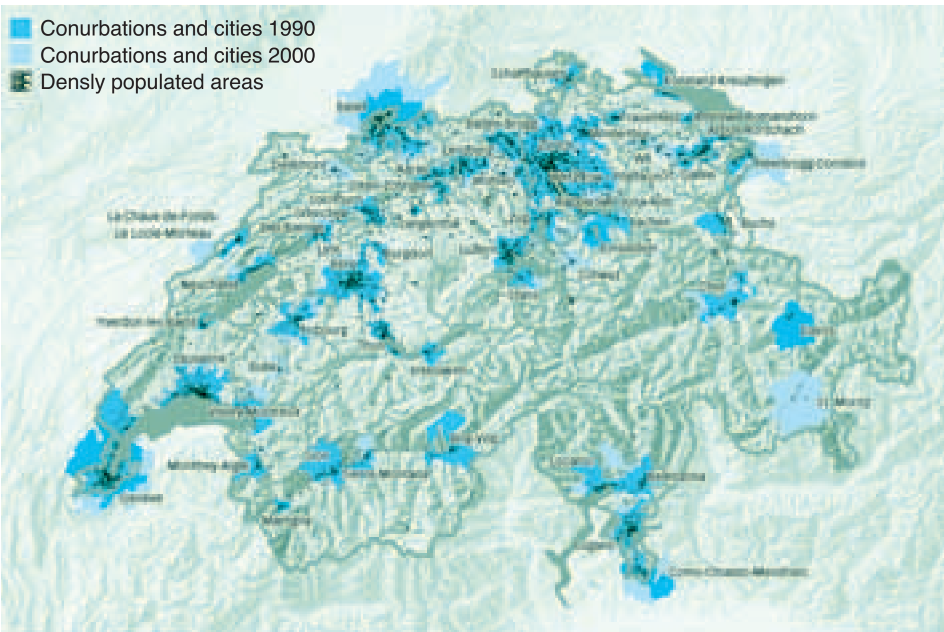
Swiss settlement types have undergone a radical change in the course of urbanisation. Until the 1970s densely populated towns and villages were clearly distinguishable from the vaster expanses of thinly populated rural areas. Such clearly differentiated settlement patterns are a thing of the past. Urban-type functional zones are no longer restricted to clearly delineated areas but are expanding to a radius of several square kilometres.

City nuclei and their original peri-urban areas have a high density of buildings, workplaces, population and cultural, economic and social activities. These cities are surrounded by less densely populated areas in which agricultural zones alternate with extensive residential estates with detached houses, unstructured industrial estates, shopping centres and leisure parks with vast tracts of parking areas. This heterogeneity no longer corresponds to traditional notions of a ‘city’. Moreover, there is an almost complete lack of clearly and intentionally structured public space.

Functional and social segregation

The spatial distance between places of residence, work and leisure has been increasing. Jobs essentially tend to be concentrated in core cities while places of residence spread out from the urban rims. In 2001, fifty-six per cent of all workplaces in urbanised areas were located in the core cities, while their resident population made up only forty per cent of the total population.
Segregation of place of residence and work generates massive numbers of commuters. From 1990 to 2000 the proportion of people working and living in the same municipality dropped from forty-five to thirty-nine per

Swiss conurbations and cities, 1990 and 2000



cent, while the annual commuter balance in all core cities increased from 81 000 in 1970 to 216 000 in 2000. The spatial distribution of workplaces has become increasingly complex, with core cities losing jobs since the early 1980s while workplaces increased – or at least decreased much more slowly – in municipalities in the original peri-urban area. The shift of jobs from core cities to their suburbs is causing tangential commuter streams which overlay traffic movements between suburbs and core city, thus complicating public transport access.

This disparate development of settlements has been accompanied by increased social segregation. For various reasons, young families with mean to high incomes prefer to live in green-belt municipalities where properties and housing are cheaper, environmental quality is better and there are more green spaces. At the same time, good transport connections place the core city's cultural and leisure facilities within easy reach.

Core cities groan under high numbers of socially marginalised population groups (the poor, elderly, immigrants, unemployed, etc.), who not only enjoy the city's greater anonymity but also its comparatively wider and better quality range of social services. Consequently social problems have become more acute in core cities. In large conurbations this trend has already spread to municipalities in the original peri-urban area.

Metropolitanisation

In the course of the disparate settlement development in conurbations, large numbers of residents moved from the core cities to the very edge of the periphery, causing a drastic population decline in some cities. Some of these cities, however, currently show a trend towards re-urbanisation. Opportunities for inner-city growth have never been better: low vacancy rates, active public funding for housing, and the occasional slight population increase all point to urban living becoming more attractive again. The population of the city of Zurich, for example, has increased slightly since the late 1990s and similar tendencies can be observed in other Swiss cities. Given the high number of elderly people living in cities, more housing should become available in the near future. This effect may contribute to increasing population numbers. The re-development of so-called 'brownfield sites', the upgrading of areas adjacent to railway tracks and the revitalisation of centrally located properties no longer used by the Swiss postal services and the Swiss army reflect this trend toward reurbanisation. Successful examples can be seen in 'Zurich West', Winterthur and Baden, as well as areas in the vicinity of Basel and Neuchâtel railway stations.

The three metropolitan areas of Zurich, Basel and Geneva / Lausanne have become significant economic centres in Switzerland, chiefly due to excellent road infrastructure for both private and public transport. While Swiss cities cannot compete with European metropolises, other advantages compensate for their smallness. A French survey explored the attractiveness of numerous European cities based on fifteen criteria, namely: population, accessibility, number of companies, tourist accommodation and overnight stays, fairs and congresses, cultural attractions and museums, and involvement in international research networks.[9] This survey put Zurich and Geneva in class four – an excellent ranking – on a par with Düsseldorf, Helsinki, Oslo, Lyon and Florence. Basel came next, with Torino, Nürnberg, Luxemburg and Hannover; followed by Bern and Lausanne, with Freiburg (Germany), Graz, Mulhouse and Salzburg. Characteristically for Switzerland, itsurban space comprises several smaller and medium-sized cities with excellent transport links and mostly rural catchment areas.

Town versus country

Nowadays the contrast between town and country is quite subtle and blurred. Rural spaces tend to have similar characteristics which distinguish them from urban centres, i.e. low population and settlement densities; specific economic structures (for example as regards employment); strong dependence on urban centres and their core facilities; threatened municipal functions and structures; stagnating or decreasing populations; great significance of the natural environment and surrounding landscapes.

The rural areas as a whole should be perceived as autonomous space, complementary to their urban counterparts. It is only together, and in a relationship of partners, that both town and country can really make the most of their respective resources. Employment in peripheral municipalities far from conurbations tends to provide minimal added value. Municipalities with fewer than 500 inhabitants and a history of population loss may no longer be viable.

One of the major challenges of these areas, therefore, is to ensure minimal population numbers, especially in small rural centres, including adequate numbers of attractive jobs. Other challenges facing these areas are ensuring minimal basic provision, including public-transport access; sustaining a functioning municipality; expanding tracts of fallow land and consequent reafforestation; and the high cost of measures to prevent natural disasters.

Focus: Metropolitan Switzerland – inform, make aware, animate

The urbanisation of Switzerland did not used to be an issue. Indeed, the myth of 'rural Switzerland' was propagated not just in tourist circles. In September 1994 the founding members of the Swiss Metropolis Association *(Verein Metropole Schweiz)* felt that this needed to change because 'Whoever dreams country, will not build a good city' according to one of the slogans in the February 2002 Charter for the Future of Urban Switzerland published by the association. The crux is not to watch passively as Switzerland is being built over, but to participate actively so it can grow into a viable 'cityscape Switzerland' – a model metropolis where high-density housing and intact landscapes interweave, providing an attractive location for the private sector, and high quality of life for the residents.

It is important to openly address complex, controversial and possibly conflict-ridden situations. If the family of a company executive desire to live in a detached house surrounded by a vast plot of land, they exacerbate the very urban sprawl which made them want to escape to the country. However, it is not enough to address problems openly; they must also be discussed. Meanwhile, urbanisation and metropolisation have become favourite media topics. Landscape degradation due to buildings and roads, as well as environmental issues are once again at the top of the agenda. While city air may still make people free, it has certainly long ceased to be healthy. Numerous problems need to be resolved. High-density housing, for example, has still not made the expected breakthrough. The first question therefore is: how do we reach a solution? The answer will have to address political power. Our municipal and cantonal boundaries – even the border of our country – no longer coincide with the regions in which problems arise and need to be resolved. As the title of a publication by our association, written by the publicist Rudolf Schilling in 2003, proclaims: *Die Schweiz muss neu eingeteilt werden* 'Switzerland needs to be divided up anew'. One linked transport system brings together several cantons and tens of municipalities, if not over a hundred. Such cooperation schemes have gained ground not only in the transport sector but also among settlements. Small municipalities are merging so they can afford the kind of administration they require, and / or because insufficient numbers of men and women stand for election to political office. With regard to education, the view that it is an anachronism for a country as small as Switzerland to have twenty-six different educational systems, particularly in view of present-day mobility, has at last won through – but cantons will hardly merge for this reason alone. Discussions on public health in their turn have shown that cutting-edge medical technology will be concentrated in one or two – at most three – Swiss locations. These political issues will all affect the political landscape. It remains to be seen whether and when cantons will merge into regional bodies. At any rate, this question is being very hotly debated indeed.

The publications of *Verein Metropole Schweiz* are intended as tools for politicians, teachers, publicists and the interested public. The latest brochure, for example, Culture as a Source of Power *(Kultur als Motor),* tries to show how the arts and culture work, and how they can be made to contribute towards long-term peaceful living and co-existing in Switzerland, a country with people from one hundred and ninety-four different nationalities and some forty different languages. The three brochures are intended not only to provide information, but to increase the reader's awareness and to animate people to act.

This is the Association's objective now: animating action. Not only among specialists, experts and policy-makers, but also at the grass-roots. A travelling exhibition is a great tool to achieve this – preparations are already under way.

Ursula Rellstab, President, Verein Metropole Schweiz

Reference: www.metropole-ch.ch

Land reserves in designated building areas

The aim of defining designated building areas is to enable the growth of settlements. Their location and surface area should take current and future needs into account. Designated building areas (DBAs) in Switzerland currently cover a surface area of some 220 000 hectares (approx. 543 600 acres) – not counting traffic areas – of which some seventy-three per cent, or approx. 160 000 hectares, have already been built over. With a population of 6.8 million people, the DBA amounts to 235 square metres per inhabitant.

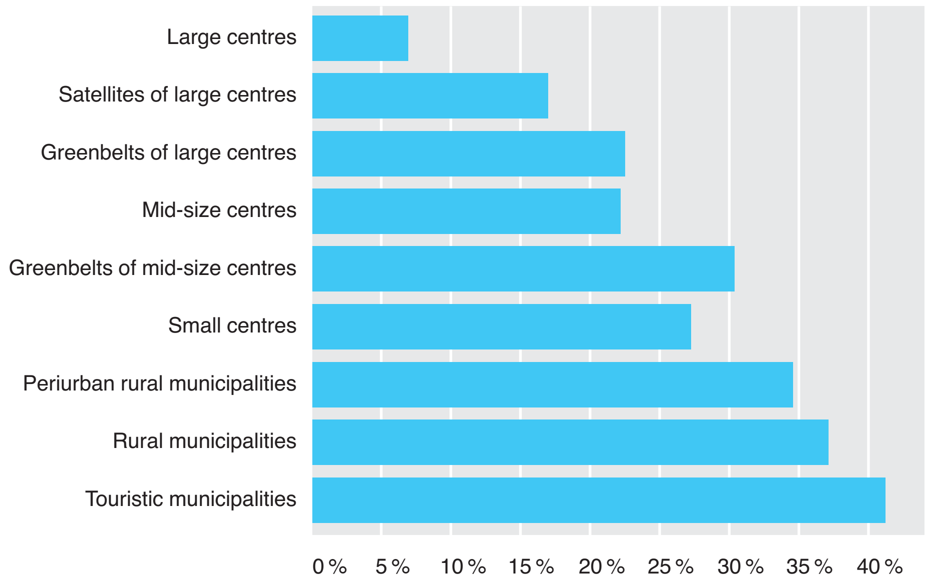
In all, twenty-seven per cent of DBAs, or approx. 60 000 hectares, have not yet been built over and are held in reserve. The largest tracts of building reserve are in rural areas, particulary in tourist municipalities with a high number of holiday homes. This gives rise to the question of whether building reserves are indeed located where needs will be greatest

Population development, 1995 to 2003

Population development
- over 4.1 %
- 0 to 4 %
- below 0 %
- Municipalities with fewer than 500 inhabitants
- conurbations and cities

in the future and where an expanse of the built-up area will be appropriate.
Buildings and transport infrastructure, including farm houses and utility structures, also exist outside actual DBAs. In particular, rural areas are dotted with the historically grown scattered settlements and hamlets so typical of certain regions of Switzerland. Finally, traffic areas and other infrastructures, buildings and facilities for defence, leisure and recreation are also located outside DBAs.
Total settlement area in the country amounts to 105 000 hectares; approximately half a million people live here. Traffic infrastructure accounts for 55 000 hectares, just over half of the built-up area outside DBAs.

Building reserve zones in Switzerland, 2000 – proportion of non-built up areas (BUAs) (except public buildings and facilities)



Focus: ‚Brownfield' Switzerland – redevelopment of previously developed land (PDL)

The disappearance of whole industrial branches, the merger and sale of companies, higher production capacities on smaller surface areas – all these have increased the surface area of PDL. From 1991 to 2001 alone, there were twenty per cent fewer workers in the production sector. Apart from this loss of industrial jobs, the relocation of industries from the centres to the periphery is another reason for the existence of numerous plots of PDL in easily accessible, inner city locations, only a small portion of which are being redeveloped. Although these 'brownfields' would be predestined to be turned to different use, many investors prefer 'greenfield sites' outside settlement areas.

The total surface area of PDL amounts to some seventeen million square metres, which is equivalent to the surface area of the city of Geneva and could provide housing for 190 000 people as well as 140 000 jobs. Some eighty per cent of these brownfields are located in the urban areas of the Swiss *Mittelland.* More than half of this PDL is within thirty minutes by car for over half a million inhabitants and this is where more than a quarter million service-sector employees work. However, within thirty minutes public transport reaches some three times fewer inhabitants and service-sector employees than private transport. While two thirds of all PDL have been given passable to excellent marks in redevelopment assessments, billions of francs are being wasted due to the slow redevelopment of PDL, with municipalities losing annual rents on unused plots alone to the tune of 1.5 billion Swiss francs, and losses of annual tax revenues amounting to between 150 and 500 million Swiss francs.

According to approximately half of all owners of PDL, it is the lack of users and unsuccessful searches for investors that impede redevelopment, while one third of those owners claims to have problems with local building and zoning laws. In their view current zoning laws are not flexible enough to accommodate long-term redevelopment of what are often huge tracts of land. Many owners of brownfield sites would welcome start-up funding to cover possible financial constraints and risks in the early stages of their projects. And while contamination evidently does not pose an insurmountable obstacle to these owners, cleanup may become costly, and costs of up to one thousand Swiss francs per square metre may soon drive land prices into the negative zone, particularly in peripheral, not very attractive locations. A majority feels that authorities are not doing enough to revitalise PDL.

Apart from such rational and rather obvious difficulties, redevelopment projects are often slowed down because of builders' and investors' irrational fears. The federal government wants to improve its information policy to promote interest in and acceptance of such redevelopment projects, and for this interest to be reflected in policies and concepts. It is hoped that planning procedures can be accelerated and planning become more certain. We are currently exploring ways of providing support to model redevelopment projects.

Martin Vinzens, Federal Office for Spatial Development

References: www.are.ch and www.umwelt-schweiz.ch/altlasten. – Andreas Valda, Reto Westermann, *Die brachliegende Schweiz – Entwicklungschancen im Herzen von Agglomerationen,* Eidg. Departement für Umwelt, Verkehr, Energie und Kommunikation, Bundesamt für Raumentwicklung, Bundesamt für Umwelt, Wald und Landschaft (ed.), Bern 2004 (to order, please contact www.bbl.admin.ch/bundespublikationen).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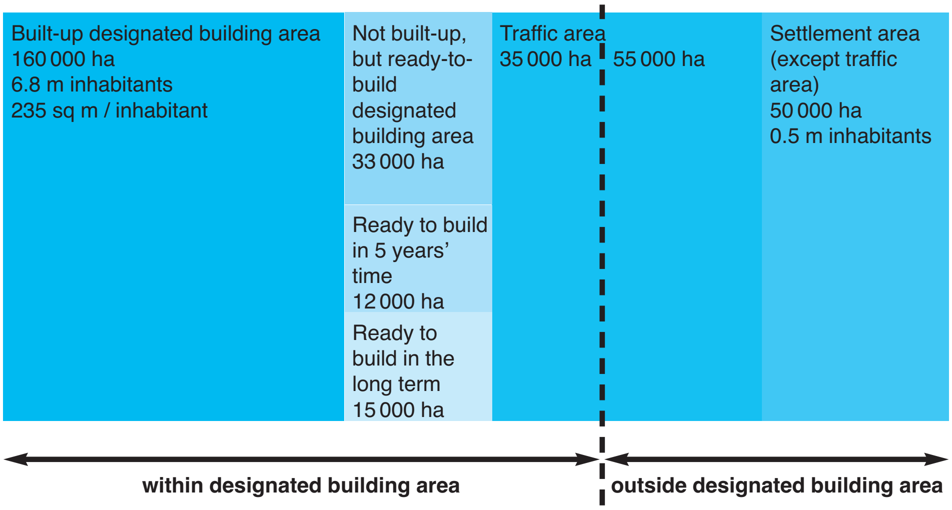
Designated building areas and settlement areas



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Increasing mobility

Increased mobility has been one of the chief factors in spatial development in the past few decades. As in other industrialised countries, commuting distances and leisure-time mobility have increased sharply; commuters can travel easily to and from large urban centres.

While there has been only a slight change in the number of mobile individuals over the past decades, time consumed for mobility, and the number of daily journeys, distances covered as well as traffic volume in passenger-kilometres and hence rapidity have increased significantly.

The population's motorisation and the proportion of motorised individual traffic in total traffic have also seen a strong increase. Time budgets for various traffic purposes have shifted significantly, with leisure-motivated travel increasing over shopping and goods traffic, while commuting time has remained stable.

The high increase in mobility reflects changes in spatial structures. Travel behaviour of private households and companies depends both on their locations and modes of transport available. Spatial structures and accessibility determine choice of location. The more widely scattered settlements are, the longer the distances that need to be covered; conversely, settlements tend to expand more if the scope for mobility is greater. Switzerland's excellent road system ensures that travelling time to the nearest large conurbation rarely exceeds one hour, with the exception of a very few peripheral municipalities in alpine cantons. Since these areas are quite thinly populated, there are not many people in Switzerland who have to travel longer to reach the nearest large town.

Public transport usually takes longer to reach the nearest conurbation than motorised individual transport. However, in large urban areas investments made in various regional transport systems – in particular the so-called *S-Bahn* or suburban train service – are paying off, generally keeping travel times short.

A key indicator of the quality of a residential location is central public facilities, shops in particular, within walking distance: in Switzerland almost five million people live less than 350 metres from the nearest grocery shop; only a little over half a million people have to cover a distance of over one kilometre. However, access to shops, etc. varies greatly from one region to the next, with larger cities having a clear advantage.

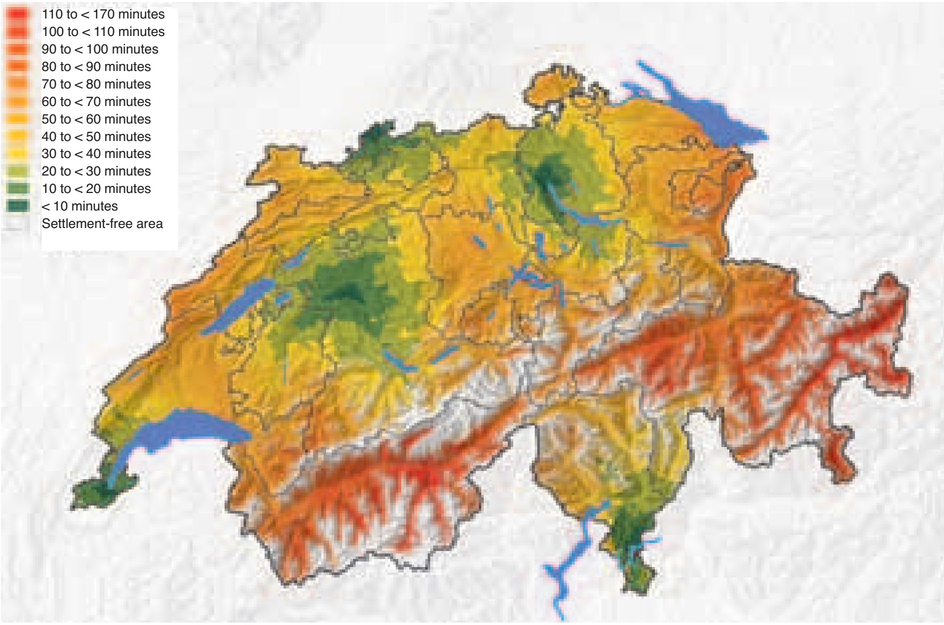
Land-use planning

Construction and planning legislation

Swiss legislation contains a large number of binding legal regulations at the three political levels – national, cantonal and municipal. Of course, the rules of architecture as defined in building standards, and public and technical regulations also apply. Swiss legislation on building and planning distinguishes between a public and a private sector. State or public building legislation addresses legal relationships between citizen and state (laws), while private building legislation governs legal relationships between individuals (contracts and zoning laws).[10]

Public legislation on building and planning comprises regulations concerning the construction, existing stock, alterations to and use of buildings and facilities. Further federal, cantonal and municipal legislation also affects construction work.

Accessibility by individual motorised transport (IMT)



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The following areas of legislation and regulation are essential to Swiss settlement policy:

- land-use planning (cantonal structural planning, municipal land-use policy, reorganisation of land, access, information, citizen participation);
- building legislation (building and land-use regulations, building permits, regulations concerning health and safety);
- nature and national heritage protection (nature protection, protection of monuments, archeology);
- environmental protection (noise, air, soil, water, environmental compatibility).

Federalist spatial planning

The 1969 constitutional amendment on spatial planning *(Raumplanungsartikel)* empowers the Swiss government to pass fundamental legislation on land-use and spatial planning and to promote and coordinate cantonal efforts in this field. However, detailed legislation in areas of crucial importance, i.e. deciding where construction is or is not to be allowed, lies within the sole domain of the Swiss government. According to the Federal Constitution, the cantons and municipalities are responsible for spatial planning, which they must also implement, while cantonal constitutions define areas of competence between the respective cantons and their municipalities.

The Federal Law on Spatial Planning *(Bundesgesetz über die Raumplanung, RPG)* came into force on 1st January, 1980; the relevant ordinance *(RPV)* on 2nd October, 1989. A piece of framework legislation, the spatial planning law defines objectives, principles and the most important instruments and procedures to ensure sustainable land use and a well-ordered settlement of the country according to the constitution. The most important instruments provided by the spatial planning law are cantonal structure plans; municipal land-use policies *(Nutzungspläne)* outlining how owners may use their land; as well as federal concepts and specific plans.

Cooperation of federal and cantonal governments is one of the key postulates in cooperative federalism. The federal government promotes and coordinates cantonal spatial planning first and foremost by means of the above-mentioned framework legislation and by approving cantonal structure plans. It also needs to coordinate its own regionally relevant tasks with those of the cantons. To do so, it relies on federal legislation as well as planning instruments, concepts and specific plans. Moreover, it draws up concepts and specific plans on issues largely within its own jurisdiction (transport infrastructure, defense, power lines, etc.).[11] Highly developed municipal federalism is the rule in most Swiss cantons.

This is why the following distinctions usually apply in the area of land-use planning: each canton is responsible for structural planning affecting the whole cantonal territory and binding for the regulatory authority; the municipalities are responsible for spatial planning which is binding for individual property owners, in particular the clear distinction of where construction is or is not permitted; and the definition of the actual type and extension of construction in designated building areas (municipal land-use policies).

A new spatial planning policy for Switzerland

To launch a political debate on the country's future land-use and sustainable development, the Federal Office for Spatial Development published its Spatial Development Report in March 2005.[12] Based on the evaluation of past and current policies and developments, the report

Focus: Second homes – their negative impact

According to the year 2000 census, second homes amount to twelve per cent of total residential housing in Switzerland; in some tourist cantons, the rate is over thirty per cent; and in certain tourist destinations – Flims, Verbier, Adelboden and the like – it even exceeds fifty per cent. Since 1980 the number of second homes has risen sharply and is growing faster than that of first homes. It is to be assumed that this trend will continue unless countermeasures are taken. The increase not only concerns tourist destinations but urban regions, too, where second homes are used for study and work rather than leisure time. Second homes do have a certain positive impact on regional economies. Around one-quarter of all overnight stays in Switzerland can be attributed to holiday flats. Moreover, construction and maintenance of these buildings provides work for the building trade. However, these positive economic effects are offset by the fact that holiday flats usually compete with hotels, which is detrimental to the regional economy: for one thing, visitors staying in holiday flats usually spend less money than hotel guests; secondly, the private accommodation sector (holiday lets, B&Bs, guest houses, hostels, etc.) creates far fewer regional jobs than the hotel business. Moreover, the consumption of settlement area is considerably higher per bed in second homes than in hotels and second homes stand empty for much of the year: recent surveys have revealed an average occupancy rate of just ten to fifteen per cent. An increasing number of beds in second homes therefore leads to a decreasing added value per guest, while settlement area consumption increases, which further exacerbates urban sprawl.

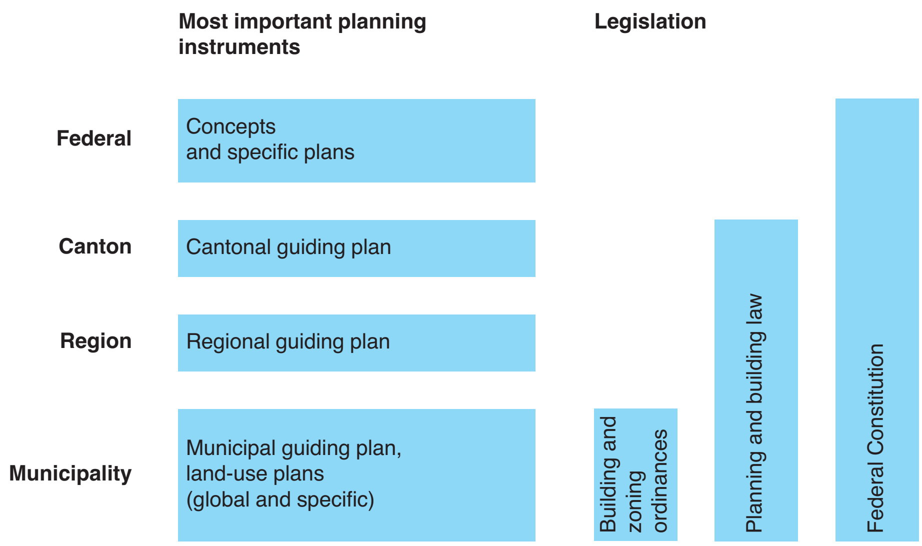
Rising numbers of second homes also have undesirable social effects. Property prices and rents increase as they are pushed ever higher by demand from usually very affluent outsiders, which makes it harder for the local population to find attractive, affordable housing nearby. In addition, high numbers of second homes entail excessive municipal infrastructure costs since infrastructure needs to be dimensioned for maximum use over a short period of the year. Again, it is the local population who suffer: as it is they who have to pay more taxes for these higher expenses.

Excessive numbers of second homes have a negative impact on the landscape. However, attractive landscapes are the cornerstone of Alpine tourism, which is why the competitiveness of Swiss tourism may be in jeopardy. Many tourist regions have come under massive pressure to curb second home construction and various Swiss tourist destinations (such as Zermatt or the Upper Engadin) have recently become active. But even in areas where this pressure is not quite so great, pre-emptive action would be indicated to control the number of new-build second homes, to ensure sustainable benefits to the regional economies, and to nip urban sprawl in tourist areas in the bud.

Sabine Mühlinghaus, Federal Office for Spatial Development

Reference: Schweizerische Vereinigung für Landesplanung (ed.), *Liberalisierung der "Lex Friedrich". Folgen für den Zweitwohnungsbau,* Bern 1995.

Overview of planning instruments and legislation



Source: Schweizerische Vereinigung für Landesplanung (VLP-ASPAN)

presents possible future scenarios and various options for action. The 1996 Principles of Land-use Planning in Switzerland[13] are to be edited after extensive debate, including public participation. The new principles will have to be more specific and more binding if particular qualities of any one location are to be preserved and developed and if the very costly urban sprawl is to be brought under control.

The current debate on future spatial development has focused on the following issues:

- the demand of towns and conurbations for improved recognition of the role they play in the country's development and of the particular burdens placed on them;
- the threat of marginalisation of rural areas, particularly in mountain regions where continued depopulation and weaker economic development are to be expected;
- the demand of rural areas concerning basic provision (public transport, postal services, schools, hospitals);
- structural and architectural requirements for structures outside designated building areas, which have changed due to structural changes in agriculture;
- impact of the 'New Land-use Planning Policy';

– combination of protection and utilisation of the alpine area to ensure sustainable development in the sense of the Alp Convention;
– implementation of the concept for 'Regional Nature Parks' and 'Landscape Adventure Parks';
– plans for desirable global spatial development integrating numerous projects, i.e. leisure and amusement centres, shopping centres and sports arenas.

Sustainable spatial development

Future spatial development must be sustainable. This principle has been incorporated in articles 2 and 73 of the Swiss Constitution as an objective of public action.

The challenge of sustainable development consists in taking the three criterion clusters of the environment, the economy and society into equal consideration. In its '2002 Sustainable Development Strategy' *(Strategie Nachhaltige Entwicklung 2002),* the Swiss government defined various policies to be implemented in the field of land-use planning among others. It also expressed very clearly the intention to slow down the rapid expansion of settlement areas in recent years. The lead indicator of 'land consumption' is to be used to ensure that per capita settlement area will not exceed the current value of 400 sq metres.

Current spatial development is unsustainable and has numerous weaknesses. For one, there is a disproportionate concentration of both

Group of criteria for sustainable development

Target dimension: economy	**Target dimension: society**	**Target dimension: the environment**
Promotion of economic growth through spatial development policy	Development of rural and peripheral regions oriented towards regional centres	Promotion of environmentally-friendly transport and reduction of 'forced mobility'
Improve accessibility	Protection of human health; protection from emissions and natural hazards	Preservation of non-renewable resources
Acceptable cost of settlement development	Improvement of quality of life, particularly of settlement quality in local neighbourhoods	Priority of (re-) use of existing buildings over construction of new buildings

population and workplaces in conurbations, while the economic substance has dwindled throughout most rural areas. As a consequence, conurbations expand further, thereby increasing ‘imposed mobility’. What is more, a trend toward social and functional segregation has been noted in numerous locations. Designated building areas tend to be too large and in strategically unsuitable locations. While urban sprawl outside designated building areas has slowed down somewhat, it still continues – at enormous public cost.

Scenarios of future spatial development

In order to enable discussion of issues on desirable – and sustainable – spatial development and policies, the 2005 Spatial Development Report presents four likely scenarios[14] which are neither intended to predict the future, nor to measure feasibility, but to encourage political reflection on the thrust of policies in Switzerland.
These four scenarios represent likely future situations. While the first one – ‘Metropolitan Switzerland’ – outlines the result of current trends by the year 2030 if no change occurs, the other three scenarios – ‘Urban Sprawl’, ‘Polycentric Urban Switzerland’, and ‘Regional Switzerland’ are fictions based upon coherent hypotheses regarding the future of this country.

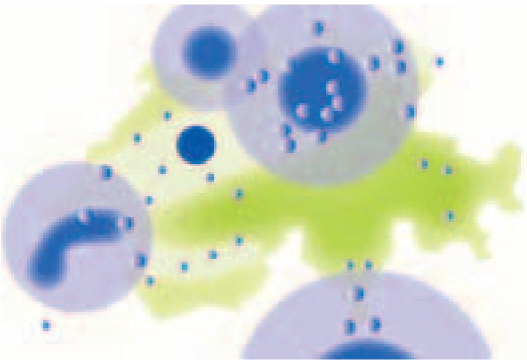
Spatial development concept: a dynamic urban network

The challenge to future land-use planning policy is to tame the rampant expansion of conurbations and to promote urban spaces with a high quality of life. The federal conurbation policy aims to promote new concepts of inter-municipal cooperation and inward-oriented development of the built-up environment. Only lively, attractive metropolitan areas and conurbations will be able to compete internationally. These powerhouses of the Swiss economy must be preserved and promoted. However, large-scale issues are currently having to be addressed through small-scale instutitional structures, a process further complicated by the country’s great political and cultural diversity. Switzerland is no island in the European ‘ocean’. Not least because Swiss conurbations require excellent connections to European metropolitan areas, transnational cooperation, is a key element of Swiss land-use planning policy. These are some of the most important issues and challenges to be resolved in the context of a truly federalist national land-use planning policy.
The 2005 Spatial Development Report presents for debate a spatial development concept for Switzerland intended to create a structure for coordinated policies. With regard to the four above-mentioned scenarios

Metropolitan Switzerland

Focus on economic centres: by 2030 the largest cities have become stronger powerhouses than ever before. Metropolitan areas have developed strongly while the attraction of peripheral areas has declined. Switzerland is marked by great imbalances within conurbations, and between them and other areas.

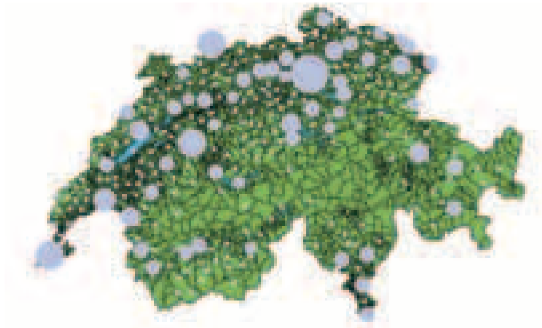
– increase of settlement area: + 15 %
– significant mobility increase



Urban sprawl – cities in decline

Declining centres without the other areas growing stronger. The motto, ‘each to himself’ has led to imbalances which the government is unable to redress. Periurban areas have penetrated deep into rural areas. By 2030, after decades of urban sprawl, Switzerland is under strain and in decline.

– very strong increase of settlement area: + 20 %, 50 000 ha
– strong global mobility increase, in particular motorised individual transport (MIT)



Polycentric urban Switzerland

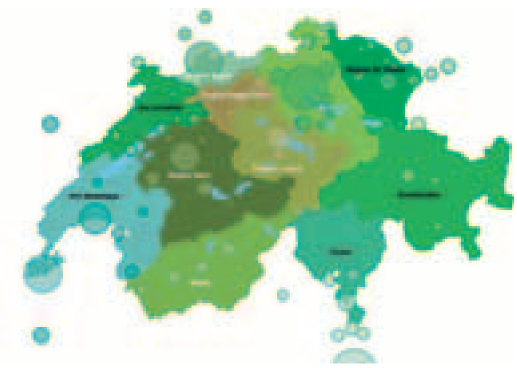
Focus of development on cities and conurbations; increasing mutual complementarity of rural and urban areas. By 2030, after several decades of gradually strengthening complementary strong points and characteristics of individual cities, Switzerland is covered by a fine web of urban centres. Settlement development has for the greater part occurred in existing settled areas.

– slight increase of settlement area: + 9 %
– high mobility, managed by effective and efficient public transport systems

Regional Switzerland

The cantons have been too small and too inflexible to resolve problems. Federalism can be strengthened by the creation of larger units. By 2030 Switzerland will be divided into eleven very dynamic regions with extremely diverse characteristics (special features) and strongly cohesive populations.

– increase of settlement area: + 11 %
– slight mobility increase

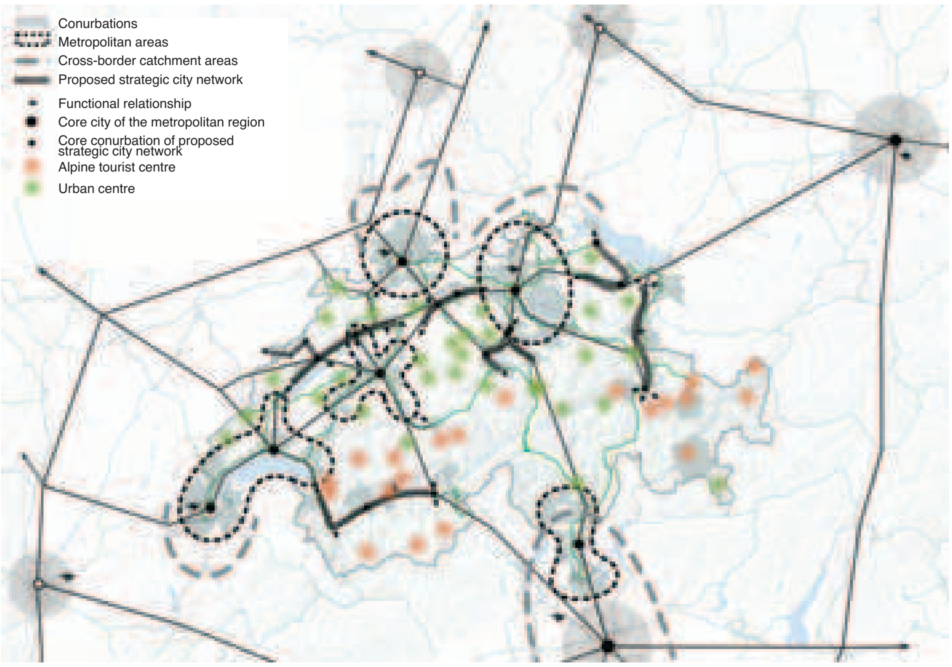


for the year 2030, the proposed Spatial Development Concept for Switzerland positions itself as follows:

– try to avoid the ‘Metropolitan Switzerland’ scenario with its imbalanced spatial development based on three excessively dynamic conurbations absorbing virtually all the country’s energies;
– counteract negative impacts of the ‘Urban Sprawl’ scenario which would lead to cost-intensive development of the built-up environment, at the expense of the country’s cities as well as rural and mountain areas;
– the network of cities in a ‘Polycentric Urban Switzerland’ scenario would ensure positive urban dynamics as a prerequisite of sustainable development;
– as in the ‘Regional Switzerland’ scenario, peripheral regions should not be left to their own devices; this requires solidarity between town and country, and among the cantons.

The objective is to achieve a dynamic, cohesive country whose citizens are far-sighted and solidary. It can rely on the energy of its economic powerhouses; wealth and welfare are evenly distributed.

Spacial development concept: dynamic, solidary Switzerland



Housing

The vast majority of the population of Switzerland lives in high-quality homes with an average per-capita living space of forty-four square metres. Over the past ten years, the rate of owner-occupancy increased from thirty-one to thirty-five per cent, chiefly due to a marked increase in condominium ownership. The year 2000 census revealed over one million first-home owners – a Swiss first!
On the down side, low-income tenant households are burdened by high rents; individuals and groups with special needs have limited market access; and there is a lack of housing for people with specific needs and lifestyles. In 2005/2006 housing construction reached a level which is likely to be as high as long-term requirements will ever be. A high proportion of detached houses increases the rate of urban sprawl, and the new housing production is mainly intended for the gilded few.
Swiss housing policy intends to provide for suitable legal structures to ensure functioning housing markets. However, any endeavours to alter obsolete provisions in the Tenant Act have so far been voted down. The main objective of the Swiss government's policy of housing promotion is to provide affordable housing for low-income households. A new Federal Housing Act placing particular emphasis on cooperation with non-profit housebuilders was introduced in 2003. However, owing to the current market and lack of financial resources, such activities have slowed down considerably. A housing research programme explores decision-making tools and concepts on how to inject fresh energy into the development of housing.

Provision of housing

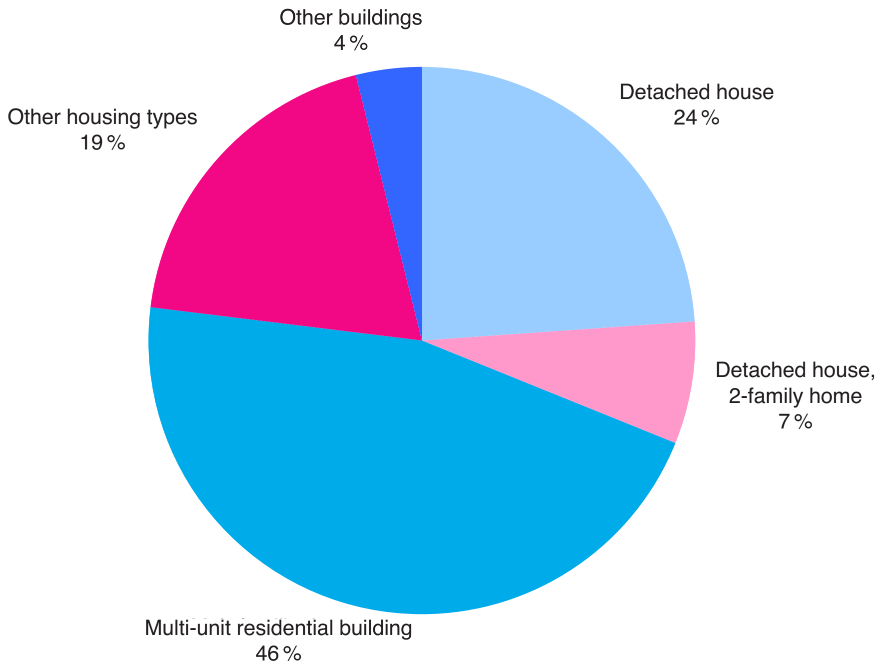
The results of the year 2000 census on residential buildings and flats provided details on the housing situation in Switzerland.[15] Combined with annual surveys on residential construction, vacant homes, trends in house rents and other indicators, they also reflect long-term market trends.

Quantifying available residential buildings and flats

The Swiss census of the year 2000 found that 6.8 million individuals lived in 1.3 million buildings with a total of 3.6 million homes – i.e. about 400 000 units more (some thirteen per cent) than ten years previously. Little more than three million homes were in permanent use, while eighteen per cent were used as second homes or stood vacant. It is of note that increasing numbers of second homes are located in urban areas. In large conurbations, almost one home in twelve is used only sporadically; in 1980 this rate was one in twenty-seven. The following paragraphs only consider residential buildings in permanent use.

In the period from 1990 to 2000, three-quarters (seventy-four per cent) of new-build housing were detached houses, signifying an increase in the

First homes according to building type



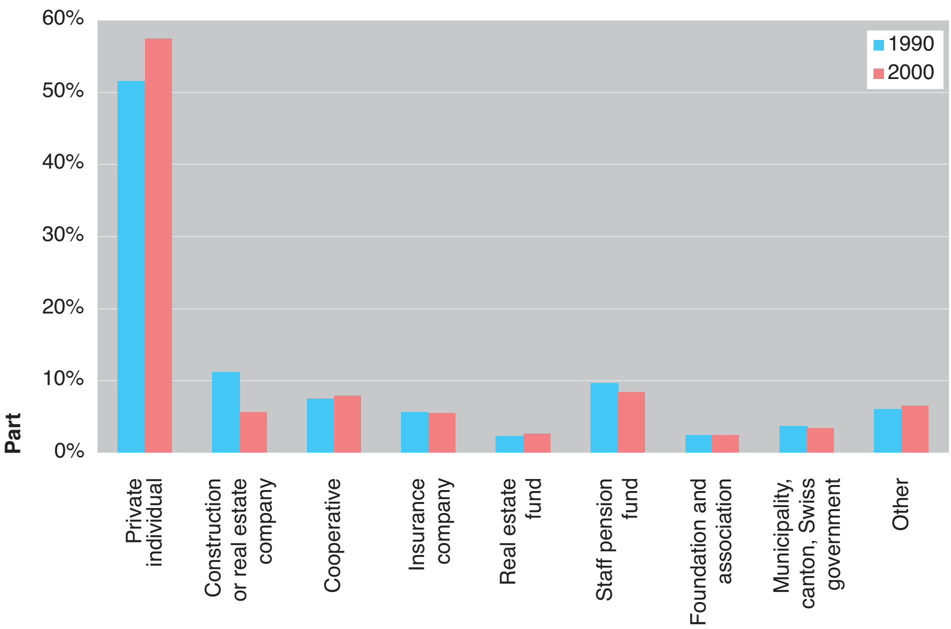
Source: Federal Census, FSO

1990s by just under one fifth (eighteen per cent), to a total of 822 000 units. Multiple dwelling units also saw some increase; these buildings still provide just under half of all first homes.

Ownership and utilisation

Almost ninety per cent of all residential buildings and just under three quarters of all homes are privately owned, a high proportion largely due to detached houses. In 2000 slightly more than one million units, or thirty-five per cent of all homes, were owned by their occupants. While the rate is still among the lowest in Europe, home-ownership has been increasing slowly but steadily since 1970.
Some sixty-five per cent of all homes or 1.9 million units are being used as rentals. They are largely in private ownership, with a slight increase since 1990. Other important providers of rental homes are staff pension funds and cooperatives, as well as construction firms or real estate agents. At a rate of less than five per cent, state ownership is a negligible category in Switzerland.

Ownership structure of rental and cooperative flats 1990 / 2000



Focus: Home ownership – low despite some increase

In 2000 thirty-five per cent of all households in Switzerland lived in their own property. In 1980 this figure was thirty per cent, and ten years later, thirty-one per cent. Despite a marked increase, particularly since 1990, owner-occupancy is still very low compared with other countries. However, there are vast regional differences. In nineteen cantons home ownership is above the Swiss average, which is comparatively low due to low values in the urban cantons of Basel-Stadt, Geneva and Zurich. There are equally vast differences in home ownership according to household type. Property-owning households being larger than tenant ones, in 2000 forty-four per cent of all families with children – forty per cent of the total population – owned their homes.

There are various reasons for the low rate of home ownership in Switzerland:

– late introduction of condominium ownership: with the exception of the canton of Valais, prior to 1965 it was impossible to own a condominium. This is why home ownership is particularly low in cities dominated by large residential buildings. For the past thirty years, however, there has been a strong increase in condominium ownership – the number of units doubled between 1990 and 2000 alone. In 2000 eight per cent of all residential housing and twenty-three per cent of all housing in the owner-occupied sector were condominiums.

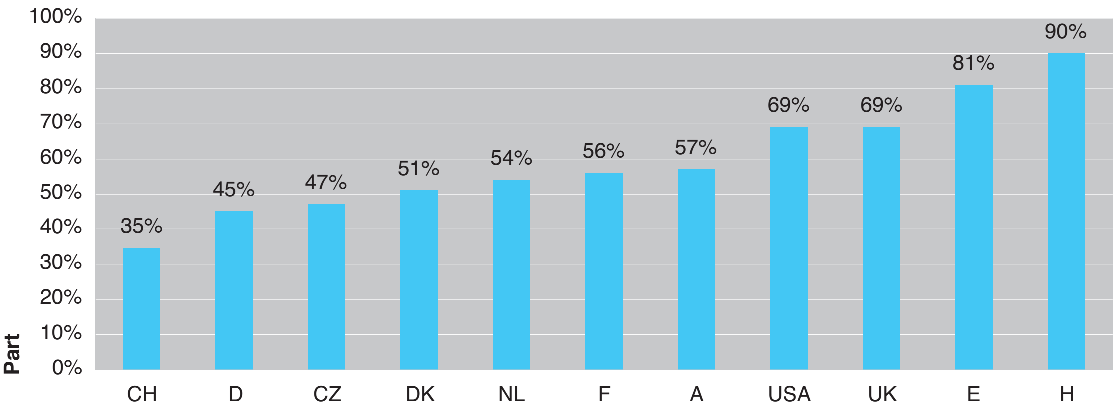
– a functioning rental housing market: the rate of home ownership is closely linked to structural conditions for investments in rental housing. Switzerland has a fairly liberal tenancy legislation and satisfactory long-term revenue expectancy, which means that investments in rental housing are attractive. Hence, the quality of rental housing compares well with that of residential properties.

– unfavourable cost-income relationship: unlike abroad, in Switzerland property acquisition costs compare unfavourably with average household incomes.

– high proportion of non-Swiss residents: while every fifth household in Switzerland is of foreign nationality, a mere thirteen per cent of non-Swiss or immigrant households own their homes or flats because these households in general have fewer assets; on the orther side, thirty-nine per cent of the Swiss households are owners.

Ernst Hauri, Federal Office for Housing

International comparison of the owner-occupancy rate, approx. 2000



Source: FOH

Home sizes, fixtures and fittings

While rental flats on average have 2.3 bedrooms, flats in the owner-occupied sector have an average of four bedrooms. Almost two-thirds of all rental flats have two or three bedrooms; one quarter are even smaller; and only one in eight rental homes has four or more bedrooms. Owner-occupied flats tend to be larger, with over half of them having four or more bedrooms, and only one in twenty being smaller flats. Although there has been a strong increase in large rental homes (four or more bedrooms) over the past ten years, the increase of large flats with a surface area of more than 120 square metres has been weaker than for same-size in the owner-occupied sector.

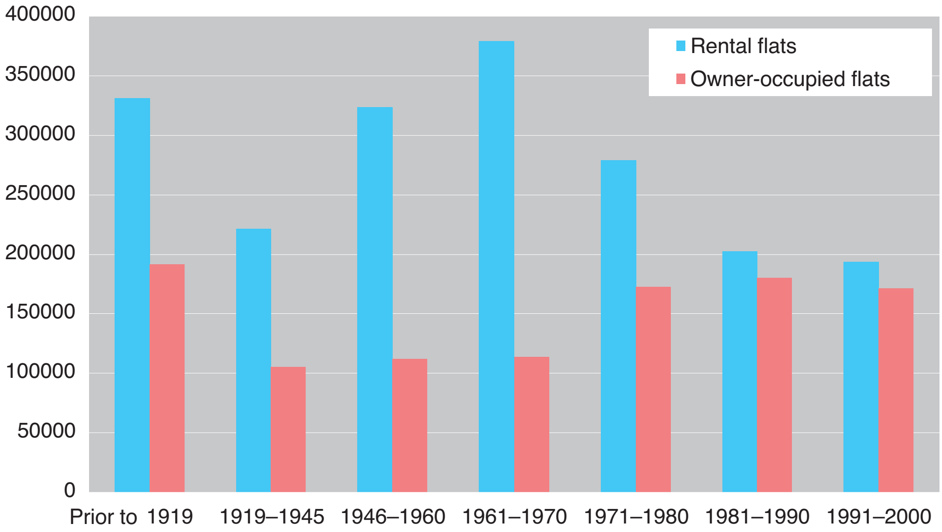
Over half the rental flats have a surface area of between sixty and one hundred square metres; only one in five has more than one hundred square metres. Conversely, three out of four owner-occupied flats are larger than one hundred square metres, while there are very few small ones. Swiss homes are very well appointed in general. Only nine per cent of all homes do not have central heating, and only a little more than one per cent have no running hot water. This high standard means that almost half of the total energy in Switzerland is consumed for residential heating and hot water.

Fossil fuel is still by far the most important source of energy, with almost two thirds of first homes heated with fossil fuel, while one fifth use gas. The remainder of the energy required is provided by wood, electricity and heat pumps as well as solar panels for hot water. The advent and popularity of heat pumps, district heating and the use of solar energy for hot water point in the right direction. However, only six per cent of all flats are currently equipped with these modern and environmentally friendly technologies. At the same time, the number of flats heated with renewable wood has been dwindling because small stoves are being replaced by more comfortable, usually fossil-fuel-based central heating systems.

Age and renovation of residential buildings

Most of the homes in Switzerland are flats in old residential buildings, with some thirty per cent constructed prior to 1945, and a further thirty per cent over thirty years old. In urban cores, the proportion of old properties is considerably higher, most of them with one- and two-bedroom units, often with rather obsolete floor plans, facilities and furnishings. There is also a considerable difference between construction periods for rental and owner-occupied flats, the majority of the latter having been built after 1970.

Rental and owner-occupied flats, by construction period



© Gerheuser, *Wohnverhältnisse* / Source: Federal Census, FSO

The year 2000 census provides information on renovations carried out between 1990 and 2000. In that decade over one fifth of all flats were renovated more or less thoroughly, most of them constructed prior to 1970. Renovation work may be motivated by different utilisation needs, problematic resident structures, lack of maintenance, vacancies due to obsolete facilities and furnishings, high energy consumption, etc. It is not customary in Switzerland to demolish houses, although the option of replacing old structures by new is increasingly being considered. However, comprehensive renovation work facilitates the better use of sites with spare land for utilisation according to Swiss construction law, i.e. by adding extensions, a floor, or a separate building.
Comprehensive renovations – be they new buildings after demolition, or total renovations – usually require giving notice to tenants, who often put up massive resistance.

House or flat rents

In the year 2000, average monthly rents amounted to CHF 1059, or CHF 13 per square metre, with significant variations among the larger regions and even greater differences among the cantons. Rents were highest in the vicinity of large conurbations and lowest in rural areas. Across cantons average rents were fifteen per cent above or below the Swiss average, with deviations reaching extremes of twenty-seven per cent above or below. The highest rents had to be paid in the cantons of Zug, Zurich and Nidwalden, while rents were lowest in the cantons of Valais, Neuchâtel and Jura.

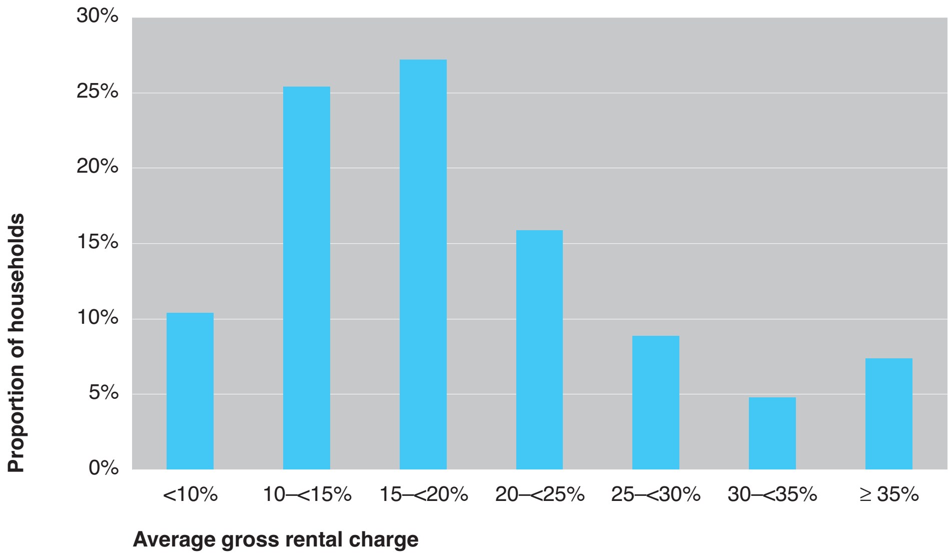
Occupancy and consumption of surface area

In the ten years between 1990 and 2000, the resident population increased by six per cent, while the number of private households increased by almost ten per cent. In other words, average household size or occupancy rate per home decreased from 2.3 to 2.2 persons, while forty years ago the occupancy rate was around 3.3 persons. Shrinking household size – in 2000 thirty-six per cent of all households were one-person households, and twenty-eight per cent were two-person households – is also reflected in a decreasing occupancy rate. In 2000 each (bed- or living-) room held 0.59 persons, while in 1980 the equivalent figure was 0.70. Throughout Switzerland, in 2000, some 175 000 households (six per cent) lived in homes with 'high' occupancy rates of more than one person per room; one in five households, however, lived in 'spacious' homes providing at least three rooms more than occupants. The larger the number of persons per household, the higher the occupancy rate is likely to be.

For example, sixty per cent of all five-person households and eighty-two per cent of all households numbering six and more people live in cramped conditions. These households are almost exclusively (single-parent) families with children. It was also found that more immigrant families live in cramped conditions than their Swiss counterparts.

On average, however, living space is readily available in Switzerland, a fact most clearly reflected in the rate of per capita consumption of surface area. In the year 2000 average per capita living space occupation was forty-four square metres, or ten square metres more than in 1980, with great disparities, however, between various population groups. While home owners occupied fifty square metres / person, tenants 'only' used thirty-nine square metres / person. The elderly (sixty-four square metres) and single-person households (sixty-two square metres) had significantly more living space than single parents (thirty-seven square metres) or young families (twenty-six square metres). Immigrant or non-Swiss families on average used less space (thirty-two square metres) than Swiss households (forty-seven square metres).

Rental charge categories – distribution of tenant households, 2003



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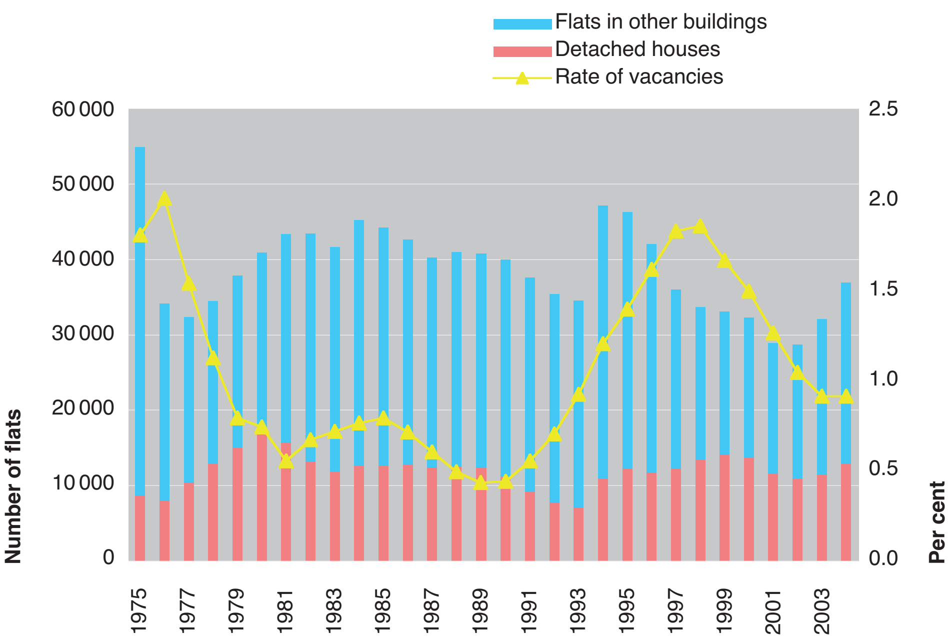
Housing cost

While only a minority of the population in Switzerland is affected by high occupancy rates, many tenants are faced with financial problems. According to 2003 surveys concerning income and consumption, tenant households on average spent twenty per cent of their income on rent, roughly the equivalent of the European average. Every fifth tenant household, however, spent more than one quarter of their income on rent, and households with monthly incomes of CHF 4 000 or less, i.e. approx. one household in seven, were burdened with an average rental charge of thirty-three per cent. Such high charges, and the fact that between half a million and one million of the people in Switzerland live at or below the poverty line (depending on the definition of poverty), demonstrate a great and urgent need for affordable homes.

Development of the housing market

In the second half of the 1990s the Swiss housing market was in deep crisis, with demand for homes dropping due to stagnating incomes and a slow population increase. At the same time the number of new homes remained elevated, reaching a long-time high of 47 000 units in 1994, which the market was unable to absorb. The number of vacant homes soared while real-estate prices plummeted, particularly in peripheral locations. From 1996 onwards the number of new buildings slumped, dropping to fewer than 29 000 units by 2002. The construction business, which in Switzerland is relatively small-scale, was severely affected by this sharp cyclical decline. Gruelling competition led to narrower profit margins, stagnating salaries and a comparatively high rate of unemployment. From 1995 to 2002 spending on homes dropped by some four billion Swiss Francs, down to ten per cent of the Gross Domestic Product (GDP). However, these values still place Switzerland squarely in the European midfield. The crisis of the late 1990s accelerated restructuring processes in the construction sector; increasing numbers of companies converted into general or total contractors (GCs or TCs), providing pre- or post-construction services from project development through to real estate administration and management. Clients benefit from transparent

New-build flats and rate of vacancies



© FOH / Source: Wohnbauerhebungen und Leerwohnungszählungen, FSO terms as well as guaranteed costs and deadlines. Large contractors exploit the strongly fragmented construction market by contracting out surplus work to small firms.

From 1998 onwards, the demand for housing picked up again due to an increase in the resident population, which was just over 15 000 persons in 1997, but – due to higher immigration – reached over 58 000 persons by 2002. Since then the annual population increase – not counting foreign seasonal workers, short-term immigrants and asylum seekers – has levelled out at approx. 50 000 persons. Increased demand for housing rapidly depleted the reserve of vacant homes, which had reached a peak in 1999 at 1.85 per cent and by 2003 returned to below one per cent. In 2005 the rate was 0.99 per cent, with vast regional differences. In more urban cantons, the vacancy rate is approx. 0.5 per cent, i.e. there is an acute lack of housing, while in rural cantons vacancy rates have reached two per cent or more. Housing construction reacted with some delay to increased demand in urban areas. It was only in 2003 that the downward trend was reversed when 32 000 new units – or 3 500 more than in the previous year – entered the market. Production increased to 37 000 units in 2004, reaching almost 39 000 in 2005. Early figures indicate that there will be a further increase in 2006, not least due to highly attractive conditions on the capital market. Since August 2002 the rate of variable mortgages has been below four per cent and by the end of 2005 most banks[16] applied a reference rate of three per cent. Having dropped during the real estate crisis, construction costs only began to pick up slightly in 2003.

Approximately one third of current new build properties are detached houses. Moreover, a survey of investor behaviour has shown that most of the new build properties are condominiums targeted at the wealthier buyer segment.[17] The see-saw movement in housing production of the past ten years has also been reflected in market trends. After 1996 the rents which flat-seekers were willing to pay fell by as much as thirty per cent; in some areas they only returned to previous levels in 2005. Variability was less marked in prices for private properties, i.e. condominiums and detached houses, which also decreased slightly from 1996 to 2000, but have been increasing steadily since. Prices for condominiums have increased rather more, expressing a greater demand for owner-occupied housing, particularly in urban settings. Trends in long-term average rents *(Bestandesmieten)* likewise reflect cyclical variability, although the index of rents never dropped into the negative in the last ten years. Rents for existing rental contracts saw an annual increase of 0.1 per cent (1998) to 2.8 per cent (2001).

Focus: Housing and health

According to the World Health Organisation (WHO), health is 'a state of complete physical, mental and social wellbeing, and not merely the absence of disease and infirmity.' A comfortable home and an attractive environment are important contributions to quality of life. The demand for 'light, air and sun' was part of the 20th century architectural avantgarde's vision of a clean, new world for healthy, vital people. Nowadays, environmental stress factors such as noise, pollutants and radiation affect our wellbeing. Our choice of where to live is increasingly influenced by environmental factors, with (outside) noise and 'electronic smog' at the top of the list of (negative) criteria. People who live near roads with heavy traffic are affected in various ways as they are exposed to noise, polluted air and greater physical risk. In many areas, public and private outdoor spaces can no longer be enjoyed due to the serious impact of air traffic. Inside our homes it is contaminants from building materials, paint, or furniture and fixtures which negatively affect human health and wellbeing. While technical solutions such as soundproof windows and mechanical ventilation may improve indoor air quality (IAQ) to some degree, certain contaminants can be avoided through careful selection of materials and processes. Sadly, energy-saving construction methods have exacerbated the problem of poor IAQ: very little air circulates naturally in new or renovated buildings with well insulated doors, windows and joint seals. If rooms are not ventilated frequently and thoroughly, the air grows saturated with damp and contaminants, jeopardising not only human health but also the buildings themselves.

The following is a list of the five most relevant indoor air contamination risks:

– allergenes lead to excessive immune reactions, usually triggered by substances from our environment (i.e. pollen, domestic dust, mites, animal hair). The most effective counter measures are good hygiene and monitoring IAQ (ventilation, humidity and temperature);
– microbial contaminants (moulds, bacteria) are relevant with regard to allergies and asthma. If rooms are inadequately ventilated, humidity remains trapped indoors, creating favourable conditions for the growth of mites and micro-organisms. Mouldy patches may be due to either structural deficiencies or incorrect utilisation;
– building materials (i.e. formaldehyde, solvents in paints or glues, biocides, etc.), human metabolism, biological pollution and various everyday activities produce chemical and indoor air contaminants;
– electromagnetic fields (so-called 'electronic smog') originate from natural and – increasingly – from man-made sources. Electric and magnetic fields are force fields created when electric power is generated, transported and used; our knowledge of the relationship between cause and effect is still incomplete, which is why any detrimental effects are difficult to prove;
– when radon, a radioactive noble gas naturally occurring in the subsoil, rises through permeable ground it may accumulate in buildings. High radon concentrations in indoor air and long exposure increase the risk of lung cancer. In Switzerland radon is the second-most important cause of lung cancer after smoking.

Verena Steiner, Federal Office for Housing

Reference: *Wohnen und Gesundheit,* a publication by Ärztinnen und Ärzte für Umweltschutz (AefU), Basel 2002.

High degree of coverage – problematic trends

Structural data on the housing situation and recent market trends show that the average quantity and quality of housing in Switzerland is adequate and that the market is largely capable of ensuring supply at a high level. Various alarming trends, however, require government intervention:

– high costs of housing particularly affect low-income households, which must either renounce living in homes adequate for their needs, accepting instead cramped conditions and / or low-quality homes in substandard locations, or else spend so much of their usable income on adequate housing that the satisfaction of the remainder of their basic needs is jeopardised. On the other hand, better-off households and individuals can afford to live in exceedingly spacious and high-quality homes in excellent locations. Any society committed to social balance must make sure that such differences do not spin out of control, jeopardising 'peaceful cohabitation'.

– current streaming of new buildings to wealthy clients seeking properties for their own use indicates that such differences are likely to worsen. Investments must be made in favour of less privileged households to help reverse this trend. Moreover, the largely uninhibited construction of detached houses accelerates urban sprawl.

– new builds are primarily targeted at a gilded clientele and at people wishing to conform to the mainstream living 'normal' lives. There is a serious lack of housing for groups wishing to live 'differently' (i.e. community-oriented, car-free, receiving a range of services, etc.).

– people and groups are often overlooked due to personal features such as skin colour, nationality, religion, etc. and tend to have severely restricted access to the housing market. All too frequently, they are passed over and forced to accept overly expensive housing in substandard locations.

– restricted market access also affects households with an adequate income but lacking the required capital, who want to become owners.

– while obsolete fixtures and fittings have become quite rare, the immediate or more distant vicinity is often unattractive, either lacking in services and facilities to satisfy everyday needs, or affected by undesirable immissions of (traffic) noise or smells.

– lack of social neighbourhood networks can lead to isolation and affect an individual's participation in social life. In view of increasing numbers of single-person households and an ageing society, this aspect requires particular attention.

Before we show how Swiss housing policy addresses these issues, further aspects should be outlined which affect current developments in this field.

Societal challenges

An ageing society

Like almost all western countries Switzerland saw its population age rapidly in the course of the 20th century. Demographic ageing – chiefly signalled by declining birth and death rates – has been a factor for almost a hundred years.

However, an ageing society is not only affected by increasing numbers of elderly people, but also, and most importantly, by a shift of balance between the various age groups. In the 1990s the age quotient, i.e. the proportion of over-sixty-four-year-olds to persons in their (prime) working age, increased by two per cent, from twenty-three to twenty-five per cent, which is a slight, yet significant increase.

Demographic ageing, however, should not be equated with the excessive ageing of society. When is someone 'old'? For a long time, people over sixty-five were considered 'old'. However, the situation of the elderly and old has changed radically in the recent past. Life expectancy has increased, health has improved, and people live longer feeling well. Many people remain active and productive far beyond retirement. Apart from a political discussion of (the financing of) retirement funds, this development has also created a demand for more and more varied housing for the elderly, focusing on small households with one or two persons, since in our society it is unusual for adult children to live with their parents or relatives. The death of a life partner frequently signals the beginning of life lived alone, and often one of social isolation, with more women affected than men due to their higher life expectancy. According to a 2003 housing survey by the Age Foundation *(Age Stiftung),* more than forty per cent of all over eighty-year-olds live alone; about one third live in two-person households, and fewer than five per cent live in households with more than two persons.[18]

While living in a residential community with non-relatives is not yet very common among today's OAPs, it is becoming more and more interesting. It seems that our lifestyles in older age are not determined by age and state of health alone, but also by the customs and experiences of an entire generation. It is therefore to be expected that the lifestyles of future OAPs and their households will look rather different than those of past and

Focus: Housing and older people

The number of elderly (sixty to seventy-four-year-olds) and old people (seventy-five plus) will continue to increase, leading to different housing needs. The period between retirement and the moment when sickness and / or disability restrict people's mobility is increasing. People remain active longer and wish to live independently in their own homes for as long as possible. Older people's lifestyles have diversified greatly in the recent past, resulting in a wide range of architectural structures, housing concepts and services. Apart from traditional residential homes for the elderly, as well as old people's homes and nursing homes, there is an increasing number of communities as well as retirement residences for wealthy clients. So-called 'assisted living' – for people requiring some degree of care – is also becoming increasingly relevant. As people grow older, homes and their immediate environment become more and more important, and demands on adequately designed spaces more sophisticated.

In older age, household situations are increasingly polarised. The past decades have brought four major changes with regard to older people living at home: firstly, an increase in single-person households – which does not mean that all these people live alone; secondly, an increase in old married couples, primarily because today's older people are from a pro-marriage generation.Thirdly, there are fewer old(er) people who live with one of their children. At an advanced age inter-generation relationships function along the lines of 'intimacy at arm's length', keeping relationships healthy because generations live separately. Finally, the number of complex households has dwindled; it has become much rarer for people to share their home with relatives or friends. Care homes or residential communities with non-relatives are not yet very widespread among the older generation.

While household size has shrunk, the living surface area has increased; the number of older people in small homes has dwindled. Over forty per cent of all OAPs living at home live in a detached house. Property ownership among the older generation increased significantly, especially during the 1990s. Nor are second homes the exception among younger OAPs and more older people now commute between two places of residence.

The various forms of ambulatory, part-stationary and stationary care for the elderly and old are not to be seen as contrasts but constitute a wide range of – ideally complementary – services for various groups of elderly people. Assisted living units and care homes, for example, often benefit from being associated with stationary facilities such as nursing homes; conversely, any old people's or nursing home will benefit significantly from the greater accessibility of wheelchair-friendly retirement homes.

Barriers in residential buildings primarily exclude people who have serious difficulties in walking, or need to be in a wheelchair. General wheelchair access improves accessibility for all, especially for frail people, but also for those with temporary disabilities or with strollers, etc. Building for the elderly therefore means, first and foremost, providing wheelchair-accessible architecture, which must conform to three basic criteria: no steps, adequate width of doorways, adequate indoor manoeuvring space. It is not necessary to build new flats for old people, but homes should be adaptable to new requirements. *Michael Hanak, Zürich*

References: François Höpflinger, *Traditionelles und neues Wohnen im Alter,* Age Report 2004, Zürich 2004. – www.age-stiftung.ch.

current seniors, whose early years were spent in traditional forms of family and marriage.

Although most people wish to reside in their own home for as long as possible, the number of people living in collective residential facilities, such as retirement and nursing homes, has been increasing. The year 2000 census revealed that seventy per cent of the residents in such homes were over eighty years old, and more than twenty-three per cent were older than ninety. These days, health problems and the need for care are the most important reasons for people moving into such institutions. Future demand for stationary facilities will depend not only on the health of the elderly but also on how well they are integrated in their families and society, on the housing market, and the availability of ambulatory, home-based services (i.e. *Spitex*[19]).

Households

As a rule, a household is a group of people living together in one house or flat, regardless of whether or not they are related to one another. In recent decades the significance of the core family has declined; the typical nuclear family has been superseded by various other forms of residential communities. Particularly in urban settings families, childless or homosexual couples, single parents, patchwork families, as well as men and women living alone coexist on equal terms. Traditional gender roles have increasingly been dismantled and are no longer defined by the strict norms of earlier generations. There are, however, significant differences between town and country in the degree to which these shifts have occurred. In 2000, urban centres with more than two-hundred thousand inhabitants had fifty-six per cent single-person and childless-couple households; municipalities numbering one to two thousand inhabitants had only about half as many, or twenty-nine per cent. More than two-thirds of all private households consisted of one or two persons. If single-person households made up fourteen per cent of all private households in 1960, they have since increased to thirty-five per cent – one-and-a-half times as many people live alone as forty years ago.

Cultural diversity

1.5 million people, or one fifth of the permanent resident population of Switzerland, did not have Swiss citizenship at the end of 2004. Almost every fourth resident alien (twenty-three per cent) originally comes from one of the successor states of former Yugoslavia; Italian citizens make up one fifth (twenty per cent) of foreign residents, Portuguese eleven per cent, Germans ten per cent, and Turkish, Spanish and French five per cent. Evidently, these dry statistics conceal highly diverse social and economic situations.

Globalisation and world-wide migration have brought individuals and groups with hugely diverse traditions and ideas to Switzerland. Particularly in urban areas and suburban housing estates, people from various countries, of various nationalities and creeds have to share rather limited living space. The arrival of foreigners with their languages and cultures presents a challenge not only to the immigrants but also to the local population, generating insecurities, fears and tension. Having to cope with different customs and ideas often results in conflicts not only between locals and immigrants, but also among different immigrant groups. It has therefore become important for landlords and property management companies to look after tenants. Their letting practice has a vast impact on tenant profiles and the social climate in a residential estate. Most cities have certain neighbourhoods which attract immigrants because that is where they will find fellow expatriates who can help them to adapt before they (perhaps) move elsewhere. Residents in neighbourhoods with reasonably-priced housing and substandard locational factors tend to risk stigma and social exclusion. Many issues and problems of integration in residential areas – school, neighbourly relationships, leisure-time behaviour, neighbourhood identity, etc. – can be addressed at an early stage. Policies to improve the quality of housing and of the residential vicinity, or contributions towards assisting and integration of the immigrant population can help counteract negative developments and enhance the neighbourhood's public image.

The integration of immigrant populations is a long-term process, involving various areas and different levels; it may become more difficult if immigrant and local populations are kept apart. Children and adolescents growing up without local playmates and friends, without acquiring the host country's language and customs, will be at a disadvantage at school and in their vocational training, with undesirable consequences for the entire society. Any policy intended to integrate immigrant populations must be widely accepted by the local population.

New technologies and housing

The IT boom of the 1990s brought some rapid changes to our lives and environments, with IT applications gaining ground not only at the workplace and in the leisure sector, but also increasingly used in residential properties and at home. Internet connections for personal computers have long been a standard feature of every home; the younger and middle generations pursue their worldwide social and business contacts by email as a matter of course. Shopping (online shops) and other routine business (telebanking, e-government) can be done from home – even participating in educational programmes, discussion fora and worldwide small talk (blogging) has become possible. However, residents are usually quite unaware of the increased use of IT in building technologies and facilities management, with sensors, software and steering systems long since ensuring the smooth running and maintenance of building technologies such as heating furnaces, ventilation, air conditioning and shading systems, locking systems, etc. Far-reaching building automation provides a maximum of comfort and security; transponder technology enables remote monitoring, not only reducing costs but also optimising the use of resources.

Still awaiting widespread application but already well advanced in their development are remote-controlled on-line home networks interconnecting home-control and entertainment systems and appliances. The principle of 'intelligent' or 'wired' homes usually functions on a pattern where sensors record and process information and transpond commands to appliances and equipment. Already on the market are refrigerators monitoring consumption and ordering groceries on-line; robotic vacuum cleaners; and digital or virtual wallpaper which makes it possible to change the mood of a room at will. It is only a matter of time before computers, cameras, screens and microphones become an integral part of every home.

The increasing technological impact on residential homes and their users is one aspect of modern living; another is architects who promote openness and transparency by designing floor-to-ceiling windows and open-plan living. Once upon a time, the purpose of a home was to protect people and offer them a safe haven. Today's homes are platforms of self-representation, a stage on which to express one's lifestyle. Individuals increasingly define themselves through their home, its location, architecture, technology, facilities and furnishings. It is not only the buildings that have become more transparent but also their residents, particularly if they use new technologies to obtain most services and even nurture their social contacts on-line.

Housing policy

In Switzerland it is primarily left to individuals and private households to satisfy the basic need of housing. However, any welfare state is obliged to assist those population groups who are unable to do so on the market and with their own resources. Accordingly, art. 41 of the Swiss Constitution on the country's 'social objectives' states that, beyond personal responsibility and private initiative, the federal and cantonal governments should provide complementary assistance to families struggling to find affordable homes. In 1973 this obligation was more clearly defined in art. 108 of the Swiss Constitution, where the Swiss government promotes house building, the acquisition of residential properties for private use, and the activities of non-profit residential builders, primarily on behalf of families, the elderly and needy, as well as individuals with disabilities.

Tenant protection and promotion of housing construction as constitutional obligations

If the provision of adequate housing is primarily left to the private sector and promotion is complementary, it is particularly important to ensure functioning markets by means of adequate legal structures. In this context cantonal and municipal building and planning laws, building regulations and zoning plans play an important role. Density of regulation varies according to the size of cantons; the distribution of tasks between cantons and their municipalities also varies considerably. Investors often claim that these complex federal structures and the wealth of regulations increase costs and impede investment. However, lengthy permit proceedings, heavily criticised only a few years ago, have meanwhile been vastly reduced. These days building projects in Switzerland are much more likely to be delayed and made more costly by far-reaching legal rights to appeal against and challenge permits already granted. This situation has given rise to demands for accelerated proceedings with clear deadlines.

In view of the high proportion of tenants in Switzerland, the Tenant Act is a powerful market regulator. Art. 109 of the Federal Constitution obliges the government to issue decrees against abusive rents, and to regulate the annullability of abusive terminations of rental contracts and the temporary extension of rental contracts. Relevant regulations were integrated into the Swiss Civil Code in 1990.

Before we address constitutional objectives and policies to promote housing construction, the following paragraphs explore some principles and problematic issues concerning the Swiss Tenant Act.

The controversial Tenant Act ...

The Swiss Tenant Act is chiefly intended to protect tenants from abusive landlord demands while providing attractive conditions to rental housing investors. The current tenant law is based on the two important legal principles of challengeability and freedom of contract. Both landlord and tenant are free to agree on terms of lease, including the rent to be paid. Landlords may make one-sided changes to contracts, provided they comply with certain contractual regulations. Tenants in turn may appeal to a court of arbitration to challenge abusive initial rents or rent increases. The same applies in the event of the termination of a rental contract, in which case certain legal formalities must be observed and a reason must be provided. If termination of such a contract should constitute unreasonable hardship for the tenant, the latter may apply to a court of arbitration for an extension of contract of up to four years. If no agreement is reached in the court of arbitration, the parties may take their case to a civil court of law. While the current protection against unwarranted eviction is largely unquestioned, the rules according to which rents are charged have been hotly disputed for quite some time. They are currently governed by the principle that rents must primarily enable landlords to break even. According to the Tenant Act, rents can be adapted to locally customary levels; however, this clause is of no great practical relevance. The major cost factor is the financing costs, which is why, in an economic rent system, shifts in the mortgage interest rate affect rents regardless of the way a residential property was actually financed. In the early 1990s, rents skyrocketed due to a strong increase in mortgage interest rates. In reaction to this increase, the Swiss Tenants Union in 1997 launched a popular initiative, 'Yes to Fair Rents' *(Ja zu fairen Mieten),* essentially demanding that rents should be based on a 'smoothed' mortgage interest rate to avoid future leaps in rent. Both the Swiss government and the Swiss parliament opposed this initiative, presenting an indirect counter proposal intended to introduce indexed rents, which would have severed the pegging of rents to mortgage interest rates, resolving this issue and introducing other major simplifications as well. This counter proposal was in turn opposed by a referendum launched by the Swiss Tenants Union. Neither the popular initiative nor the parliamentary counter proposal cleared the plebiscitary hurdle: in May 2003, the Tenants' Union initiative was voted down both by the Swiss voters and the states, or cantons, of Switzerland; in February, 2004 the parliamentary counter proposal suffered the same fate.

... and a new attempt at revision

In December 2005 the Swiss government made another attempt at revising the Tenant Act, a process whose outcome is as yet unclear. The Federal Council submitted for public consultation the draft of a revised act which exclusively addressed the issue of the rules according to which rents are charged. The draft proposes a dual system whereby the parties to the contract may choose between the index model and the economic rent model. The index model dissociates rents from mortgage interest rates; increases in rent may be imposed according to the development of the Swiss Index of Consumer Prices. The proposal allows once-yearly adjustments for residential homes of a maximum of eighty per cent of the annual price increase, and of one hundred per cent for business premises. The other model is based on the current economic-rent model. However, various improvements would allow for rent adjustments according to cost developments, with the average mortgage interest rate calculated by the Swiss National Bank. The model selected by the contractual parties would remain the same for the entire duration of the rental contract. In the absence of explicit agreement, the index model would be applied by default. Further action is currently being debated; for the latest information please see www.admin.ch.

The three major objectives of the federal housing policy

In early 20th century Switzerland, the cities had to react to substandard housing which mushroomed in the aftermath of industrialisation and due to people flocking to the cities in search of work. It was the towns which began to implement policies to promote housing construction. In 1919 the federal government granted credits to boost residential construction for the first time. After World War II and until the early 1970s, the Swiss government launched sporadic promotions to mitigate the shortage of housing due to the then strong population increase, to steer the economic cycle, and to create jobs. Only in 1973, when the relevant constitutional article was introduced, was the promotion of housing construction identified as a permanent governmental duty.[20] Certain cantons and larger cities nevertheless continued their own, independent and more or less continuous promotion of housing construction. It is in particular the cantons of Geneva and Zurich as well as the city of Zurich that have a long tradition in this field.

From 1975 to 2001 implementation of this task was primarily based on the Housing Construction an Housing Ownership Promotion Act *(Wohnbau- und Eigentumsförderungsgesetz WEG)* which, in 2003, was replaced by the Federal Act for the Promotion of Affordable Housing (Federal Housing Act, WFG). The purpose of both these acts has been to increase the number of affordable rental flats for economically weaker households and to facilitate access to home ownership. A third objective of the WFG is the promotion of models of alternative and innovative types of housing. The difference between WEG and WFG is not so much their objectives as the policies implied. The WEG provided for federal guarantee to assist tenants and home-owners who often lack the necessary start-up capital to build a house. Repayable loans (basic cost reduction) were used to reduce initial housing costs and rents, while non-repayable *(à fonds perdu)* subsidies (additional cost reduction) further reduced housing costs for tenants and homeowners with low incomes and restricted assets. In contrast, the WFG focuses on interest-free or low-interest loans. Both the WEG and the WFG, moreover, provide for further specific assistance to non-profit house builders, who play a particularly important role in providing affordable housing to economically weaker households.

The following paragraphs present results of these policies according to the WEG and WFG, as well as of other federal policies, according to the three major objectives.

Affordable rental flats for the underprivileged

From 1975 to 2001, the WEG provided support and price reductions for some one hundred-thousand rental flats. For a long time, evaluations of this scheme showed good results because it reached the target group of financially weaker households. However, when real-estate prices fell and rents and salaries stagnated during the real-estate crisis of the 1990s, the WEG became problematic; in 2003 it was replaced by the WFG. However, as promotion under the WEG scheme may run for up to thirty years, the Federal Act from 1974 still applies to these contracts.

Interest-free or low-interest loans are the main WFG instrument to improve housing for financially weaker tenant households. Such loans are intended to enable house-builders to construct or renovate affordable housing. If the federal government were to waive interest on these loans, rents would be reduced by around thirty per cent. However, this loan model has yet to be implemented. Shortly after inception of the WFG and in the context of the 2003 relief programme for the federal budget, this policy was suspended until end 2008, and credits earmarked for this scheme severely curtailed. A parliamentary proposal demanded reactivating this scheme to mitigate the renewed housing shortage in urban areas; however, the Swiss parliament voted it down in December 2005.

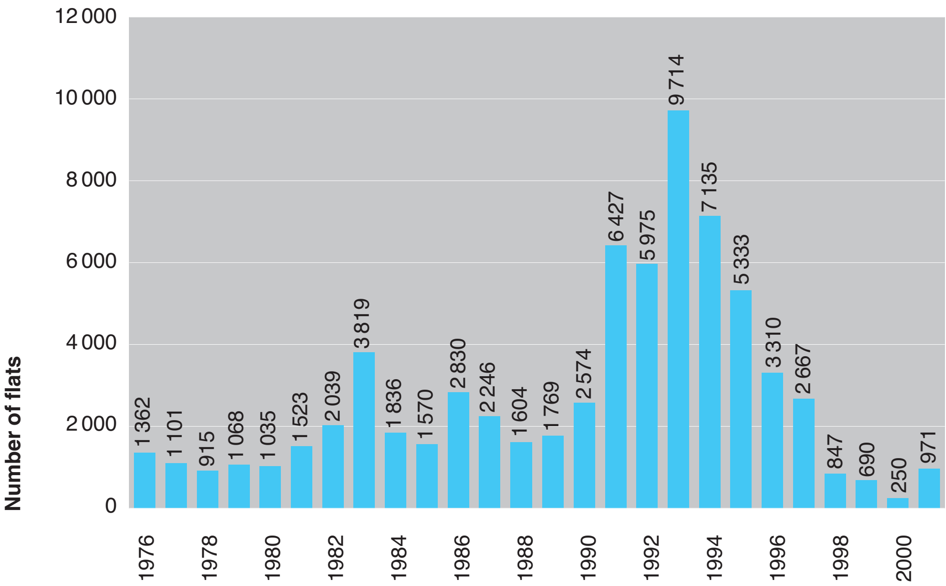
This means that, until 2009 at least, federal assistance for affordable rental flats is restricted to those WFG instruments addressing the non-profit housing sector.

Non-profit house builders – partners in the promotion of housing construction

There are more than one thousand five-hundred non-profit housing organisations (housing cooperatives, foundations, individual shareholding companies) in Switzerland who, in 2000, owned some eight per cent of the total number of housing and some thirteen per cent of all rental flats. There are only very few non-profit house builders who own in excess of a thousand units; the average size of such establishments is less than one hundred.

For decades the Swiss government has been cooperating closely with non-profit house builders because their services play an important role in the provision of housing to economically or socially disadvantaged population groups. They operate on a not-for-profit basis, which is why they ensure the long-term availability of affordable, good quality flats – a

Rental flats subsidised by WEG, 1976–2001



Source: FOH

Focus: Self-help to finance non-profit housing – the EGW

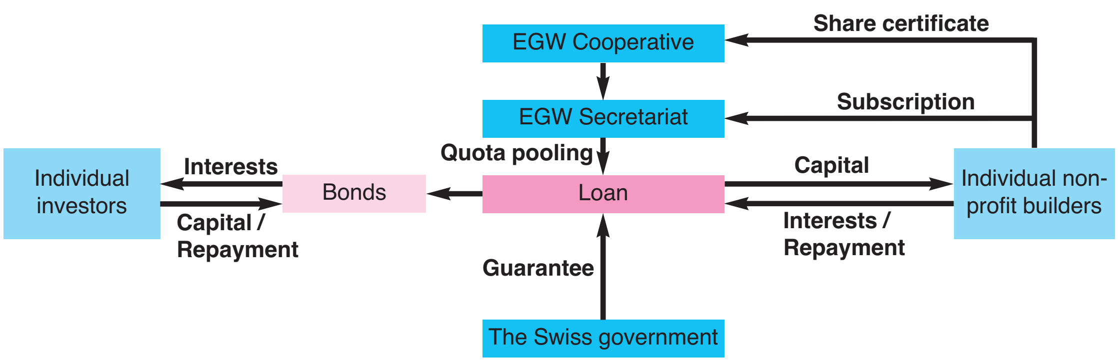
In the European context Switzerland stands quite alone with regard to the way residential housing is financed. With the exception of the Bond Issuing Cooperative for the Non-Profit Housing Builders *(Emissionszentrale für gemeinnützige Bauträger EGW),* there are no private or public institutions dedicated exclusively to this purpose. While ordinary banks provide mortgage loans of up to eighty per cent of capital cost or property value, the client has to provide the rest from their own resources. Normally, a first mortgage (at variable or standing interest rates) covers up to two-thirds of the client's capital requirements while a second mortgage covers the remaining fifteen per cent or so. As a rule, repayment is required only on the second mortgage, to which a higher interest rate applies.

Many investors have no problem funding new builds or renovations. Either, being staff pension funds, insurance companies and the like, they do not require borrowed capital, or they have at least twenty per cent equity capital, which means they can obtain bank loans to fund their projects. Non-profit residential builders, however, often face difficulties in obtaining the necessary financing, because – especially at the outset of their activities – they do not usually have the equity capital demanded by banks, and hence are not deemed credit-worthy. In 1991 the umbrella organisations of non-profit house builders joined forces with the Federal Office for Housing (FOH) to create the EGW. At the time, at over seven per cent, interest rates were very high – at least for Switzerland – and banks were reluctant to grant mortgages. The EGW is a cooperative with a current membership of three hundred. It accesses the capital market directly by issuing bonds with a duration of seven and fifteen years, distributing bond quotas to its member non-profit builders. The investor subscribes to a bond covered by a federal guarantee. As a result of this, the interest rate is lower and remains the same for the entire duration of the loan. In contrast to a mortgage with variable interest rates, the debtor can plan expenses over a fairly long period.

By the end of 2005, the EGW had issued more than two dozen bonds amounting to over 2.6 billion Swiss francs, eight of which have already been repaid. These bonds are highly sought after on the bond market; thanks to the federal guarantee, the EGW is a 'top debtor'. While builders benefit from this mode of funding because interest rates are usually one percentage point below that of standing mortgages with comparable duration, tenants also benefit in the form of lower rents.

Ernst Hauri, Federal Office for Housing

Bond Issuing Cooperative for the Non-Profit Housing Builders *(EGW)*



Source: FOH

most significant task, particularly in the 'new poverty' context. Apart from housing, many non-profit house builders also provide their tenants with various other (care) services, which helps reduce public spending. Rights of participation and cooperation in cooperative housing have engendered alternatives to owners-occupation and traditional landlord / tenant-relationships, combining the advantages of either type. If non-profit house builders are to be able to renovate and expand their properties and to fulfill their important role of social welfare providers, they do require federal funding. Since they often lack the necessary equity capital and banks often lend them money on unfavourable terms, the federal assistance focuses on financial instruments:

– the Swiss government stands guarantees the bonds issued by the Bond Issuing Cooperative for the Non-Profit Housing Builders *(Emissionszentrale gemeinnütziger Wohnbauträger EGW),* whose purpose it is to access the capital market direct in order to provide non-profit house builders with long-term capital on favourable terms (see Focus, p. 60).
– for decades the federal government has accumulated a working capital fund *(fonds de roulement)* which currently amounts to about 300 million Swiss francs. This fund is held in trust on the government's behalf by the three umbrella organisations of non-profit house builders. At a maximum of 30 000 Swiss francs per project and for a duration of twenty years, it provides low-interest loans for new builds or renovations. In 2004 and 2005, non-profit house builders were subsidised in this way to construct some 1 500 and 860 units, respectively.
– the government provides counter-security to the Mortgage Cooperative of Non-Profit Housing Builders *(Hypothekar-Bürgschaftsgenossenschaft der gemeinnützigen Wohnbauträger HBG),* which enables its members to obtain favourable bank loans despite having little equity capital.
– the Swiss government has capital shares in transregional non-profit building societies.

The WEG and WFG funding, which directly or indirectly benefits tenants with a market disadvantage, is linked to specific objects, and therefore benefits only those who live in subsidised flats. Switzerland's housing policy does not provide support to tenants affected by high rents in the large unsubsidised market segment. Only few cities and municipalities know the instrument of subsidised rents. However, in the context of social welfare rent subsidies are paid; for example, supplementary allowances for Old Age, Survivors' and Disability Insurance *(Ergänzungsleistungen zur Alters-, Hinterbliebenen- und Invalidenversicherung AHV/IV),* as well

as cantonal and municipal welfare payments often contain a component related to housing costs.
Finally, let us mention that people and households who, for various reasons, have only limited market access (large families, adolescents, non-Swiss households, people with a penal record, etc.) can call on the assistance of various agencies and care institutions which will occasionally provide guarantees on rent and whose creation was partly funded in the context of the Swiss government's housing research programme.

Promotion of home ownership

In view of the comparatively low proportion of dwellings used by their owners, a housing policy promoting home ownership use is particularly important. In the past thirty years various policies to promote and subsidise this segment have been developed. Some of them – i.e. policies in the context of the 'regular' Swiss housing and property policy, pension plans and taxation – have been implemented, resulting in a slow but considerable increase of the ownership rate. For example, from 1976 to 2001, over 37 100 properties received subsidies in the context of the WEG with identical instruments as in construction of rental housing.
The WFG also intends to increase the segment of properties for owners' use, for which it provides two types of support. On the one hand, similar to the system applying to construction of rental housing, interest-free or low-interest loans can be granted to financially weaker owners who are at a particular structural disadvantage, for example because they live in rural areas where ownership is traditional and where there are few alternatives in the form of rentals. This kind of subsidy is chiefly intended to assist much-needed renovation and modernisation work. As has been said before, such direct federal loans have been suspended until end 2008 in the context of the 2003 relief programme for the federal budget.
The other type of WFG support targets households which, on the strength of their incomes alone, would be able to afford their mortgage interest payments in the long run, but who do not (yet) have the necessary equity capital to acquire real estate (so-called 'threshold households'). In the German-speaking part of Switzerland and in the Ticino it is the Mortgage Guarantee Cooperative for the Promotion of Housing Ownership *(Hypothekar-Bürgschaftsgenossenschaft für Wohneigentumsförderung HBW)* which provides this type of subsidy; in French-speaking Switzerland it is the French-Swiss *Coopérative Romande de Cautionnement Immobilier CRCI* – the Swiss government co-founded both of these cooperatives and

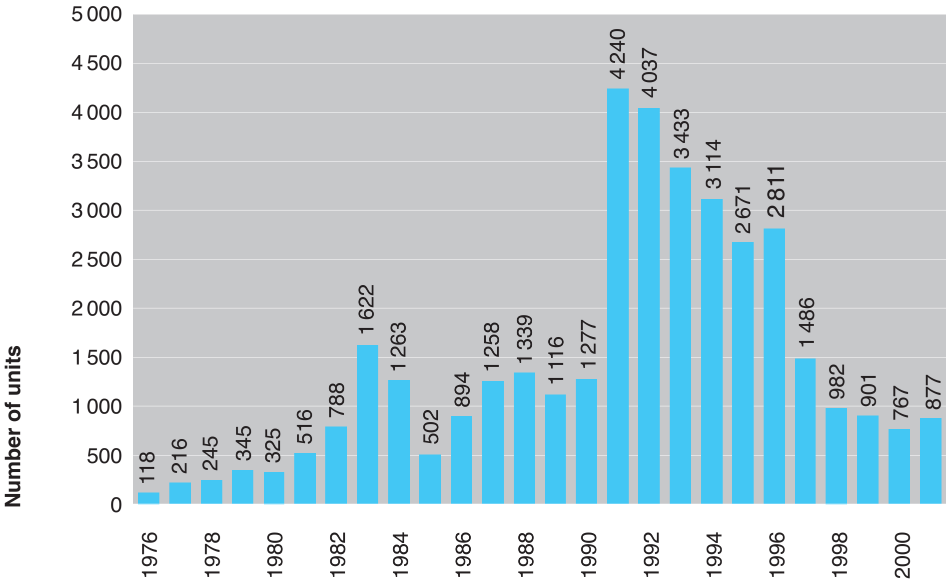
defined their areas of operation. The two cooperatives guarantee bank mortgages for up to ninety per cent of the construction or acquisition costs while the government shares part of the risk by providing counter-security. However, this type of financing has yet to make a break-through because the banks view these terms with scepticism and have been rather conservative when it comes to granting mortgages along these lines.

Occupational Benefit Plan as a source of funding of owner-occupied housing

Since 1995 the possibility of financing by anticipated withdrawal or mortgaging a property for owner's use by tapping into funds earmarked for the Swiss Occupational Benefit Plan (contributions to staff pension funds) has been providing a strong incentive to home ownership. While guarantees for mortgage loans play only a minor role, in the past ten years over twenty-two billion Swiss francs were withdrawn in anticipation. In 2005, for example, more than 37 100 policy holders anticipatedly withdrew over 2.6 billion Swiss francs. From 1995 to 2001 about half of these funds was invested in the construction of a flat or a house; about one third was used to repay mortgages, and about fifteen per cent went into renovation and extension work. Few policy holders funded the acquisition of share certificates in housing cooperatives.

Moreover, since 1990 it has been possible to make anticipated withdrawals of funds saved in the so-called tax-privileged Column 3a of the Swiss Occupational Benefit Plan in order to finance a property for owner's use. Just how much use has been made of this option is unknown. While Switzerland has no actual system of 'building society savings', certain cantons, such as Basel-Landschaft or Zug, do have such savings systems with incentives in the form of tax reductions or premiums. In the context of a proposed tax bill introducing tax-relief on property ownership, the Swiss government and parliament intended to introduce such saving schemes nationwide. However, the proposal was voted down in May 2004; it may well be that cantons which do have systems of 'building society savings' will be forced to abandon them for the sake of harmonising Swiss capital income tax. The above-mentioned tax bill also aimed to introduce a fundamental change to taxes imposed on properties for owners'use. Taxation on deemed rental value was to be abolished and the deductibility of debt interests and maintenance costs strongly restricted. As has been mentioned, these proposals were voted down. This is why home owners may continue to deduct debt interests, maintenance costs and insurance premiums from income tax; on the other hand, an

Owner-occupied units subsidised by WEG, 1976–2001



Source: FOH

imputed rental income is subject to income tax. Depending on the actual structure of funding and assets, this taxation system affects each owner differently. On the whole, it is one of the reasons why Switzerland has very high per-capita debts on mortgages.

Subsidies for low-income home-owners in mountain areas

Since 1951 the Swiss government has been encouraging cantonal endeavours to improve the housing situation in mountain areas. These subsidies are motivated by regional planning policies and primarily benefit owners making personal use of their properties. The scheme has been extended on various occasions, most recently in December 2005. Once the New Financial Equalisation System in Switzerland is brought into force – probably in 2008 – the scheme will pass into the sole competence of the cantons.

The subsidy of building costs by the federal government depends on the financial situation of the respective cantons. The focus is primarily on renovation work to residential buildings and flats. New builds are subsidised only if renovation work would be more expensive or unfeasible. Subsidies are subject to architectural conditions and to clearly specified limits of income and assets. For quite some time, approximately one

Focus: Timber – a building material rings the changes

Timber is a renewable resource. Every year Swiss forests and woodlands produce twice as much timber as the market can absorb. Innovative and efficient companies have been intensifying the use and sale of timber and its products. In accordance with national and international forest policies, the Swiss government ensures the protection of (virgin) forests. Therefore only projects which use timber and its products – buildings, furniture, solid wood or timber products – from sustainably managed forests receive support.

The constitutional principle of sustainability demands that any product should comply with the highest economic, social and ecological standards for its entire lifetime – from the extraction or harvesting of raw materials, through production and utilisation, right through to disposal. Labels and certificates provide the relevant authorities and bodies with adequate tools and guidelines for the acquisition of timber and its products from sustainable, responsible production.

There are various labels in Switzerland to identify such products:

- the Forest Stewardship Council (FSC) was established in 1993. It accredits national certification organisations who can certify local forest managers and forest product producers to FSC standards. These have to be complied with based on general criteria for sustainable and socially compatible forest management.
- as a reaction to the FSC label, representatives from the forest and timber industry in a total of seventeen European countries, including Switzerland, joined forces in 1999 to found the Programme for the Endorsement of Forest Certification Schemes (PEFC). Since then, the PEFC Council has developed into a global umbrella organisation. The certification process is implemented by an independent institution. However, each member country defines its own national standards based on widely recognised criteria for sustainable forest management.
- the Swiss Q-label forest certification was endorsed by the Swiss Accreditation Service in March 2002. The label stands for the environmentally-friendly production of timber from Swiss forests, and defines criteria for their processing. The Q-label has also been endorsed by the PEFC. It is governed by Swiss forestry legislation and environmental regulations relevant to processing; it also involves forest owners and demands continuous improvements in forest management.

New fire prevention regulations came into force in January 2005; they now permit wood constructions of up to six floors, and wood facades of up to eight floors. Prior to these new regulations, authorities could only grant building permits for one and two-floor wooden buildings with wooden weight-bearing structures and facades. Safety coming first in fire prevention, the new legal flexibility has prompted an enormous innovation surge. Advances in bonding have boosted the popularity of laminated glued timber; wood trusses and new panel products such as oriented strand board (OSB) permit new, architecturally creative structures. As in massive stone construction, the trend in timber construction is away from traditional craftsmanship, i.e. carpentry, towards prefabrication of elements on the factory floor, with timesaving final assembly on site.

The advent of computer aided design (CAD) and computer numeric control (CNC) since the late 1980s permits extremely rational prefabrication of high-precision timber products. These new technologies have made wood construction – both timber frame and panel structures – faster and more precise, and competitive with other forms of construction. At the same time, wood is still a natural, renewable resource with great appeal to our senses.

Verena Steiner, Federal Office for Housing

References: www.fsc-schweiz.ch. – www.wvs.ch. – Lignum, Holzwirtschaft Schweiz, www.lignum.ch. – Bundesamt für Umwelt BAFU, *Förderprogramm holz21 2001–2010,* www.holz21.ch.– Bundesamt für Umwelt BAFU, *Wald und Holz, Jahrbuch 2005,* Bern 2005 (to order, please visit www.umwelt-schweiz.ch/buwal/shop/files/pdf/phpL01vx0.pdf).

thousand units were subsidised each year; in recent times this number has dropped to between four hundred and six hundred units annually. Evaluations have shown that these subsidies have made a substantial contribution towards improving the quality of housing in mountain regions and slowing down emigration.

Incentives for energy conservation

As has been mentioned earlier, a considerable portion of our energy is consumed to heat (residential) buildings. To make sure that the Swiss energy and climate objectives can be attained, various policies for reduced use of energy and increased use of renewable energy are being implemented. One of them is the SwissEnergy *(EnergieSchweiz)* programme launched in January 2001 by the Swiss Federal Office of Energy (SFOE) in close cooperation with the cantons. SFOE funding goes to 'non-profit organisations and agencies which support the programme and its activities and actively set out to help it achieve its declared objectives'.[21] These include 'Minergie' and 'Label Energiestadt'. The Swiss parliament is currently debating two different ways of reducing CO_2 emissions, i.e. a CO_2 tax on fuels, with subsequent re-distribution to the population and the private sector, and a 'climate penny' *(Klimarappen)* to be invested in projects aiming to reduce greenhouse gas emissions. Which of these will gain the upper hand still remains to be seen.

Innovation promoted by housing research programme

Demand for housing has always exceeded supply over the past several decades apart from brief periods with a general or regional housing surplus. Tight markets provide few incentives for new forms of organisation and financing, unconventional planning and building procedures, or innovative architectural models and lifestyles. Residential buildings and flats will find new owners or tenants even if they do not meet their specific requirements; are of limited architectural or urbanistic quality; or do not correspond to overarching societal objectives such as 'sustainable development'. This is why the Swiss housing policy and similar policies have provided various instruments to support innovative approaches to housing. Such innovations are intended to stimulate discussion on the future of housing not only among specialists but also among the wider public and to help reduce fears and obstacles. Ultimately, public funding is intended to widen the diversity of housing.

According to the Federal Housing Act (WFG), funds from the housing-research programme may be used to support conceptual and organisational innovations, be they processes preceding constructional measures, or new management or social integration concepts for housing estates. The Act also provides for the support of model construction projects – new builds and renovations, or redevelopments realised by non-profit house builders – through low-interest or interest-free loans. Given that direct federal loans have been suspended until end 2008, such projects are to be funded from the above-mentioned working capital fund, or *fonds de roulement,* held in trust on the government's behalf by the three umbrella organisations of the non-profit house builders. However, by end 2005 no such loans had been granted; several projects are currently at the planning stage, for example a car-free, energy-efficient housing estate, and an estate specifically designed for older people in a rural setting.

On the other hand, the 2003 Housing Act provided a legal basis for the promotion of innovative concepts and procedures which the housing research programme of the Federal Office for Housing has been supporting since the 1970s. Among them are, for example, conceptual work related to the use of funds from the Swiss Occupational Benefit Plan for the acquisition of property, or the development of the Swiss Housing Evaluation System *(Wohnungs-Bewertungssystem WBS),* which has helped to improve the quality of housing not only in the subsidised sector (see Focus, p. 70). As a recent example, let us mention the model of 'minimal' condominium ownership *(Kleines Wohnungseigentum)* developed with assistance from the housing research programme. In this form of ownership the buyer merely acquires the actual flat, while common areas and facilities are provided by an investor. While this does not actually reduce current housing costs, it does enable households with little equity capital to buy into property. Such ownership structures are not admitted under current Swiss law; however, attempts are under way to adapt the Code of Civil Law accordingly and a legal 'crutch' was applied in 2005 to realise a housing estate with this ownership structure. Further examples of promoting innovation through the housing research programme are concepts for the integration of immigrant / non-Swiss residents, and for new impulses to encourage community-building in non-profit residential construction projects; finally, housing estates are being evaluated whose owners have set themselves innovative objectives.

Focus: WBS – instrument to plan, assess and compare residential buildings

The Swiss Housing Evaluation System *(Wohnungs-Bewertungssystem WBS)* is an instrument to plan, assess and compare residential buildings. First published in 1975, it initially served to assess new-build applications in the context of the federal promotion of residential construction. In 2000 the WBS was adapted to new housing requirements, and its scope of application widened.

The WBS takes into account many diverse ideas on and requirements for housing. Residential buildings constructed according to WBS concepts should distinguish themselves for their organisational flexibility and versatility. The practical value of a flat, residential building or residential estate is expressed in terms of utility value. The higher this value, the more versatile the use of a residential object.

Assessments are based on thirty-nine criteria in three categories – flat (W1), residential building (W2) and location (W3) –, each weighted differently and rated with up to three points. If the building project is compatible with relevant criteria, a high number of points will result. With regard to flats, the WBS emphasises criteria which address the flexibility of the floor plan, or the potential for alternative placement of furniture; with regard to the residential building, emphasis is on communal areas; criteria regarding location place particular emphasis on easy access to services and facilities. *Felix Walder, Federal Office for Housing*

Reference: Bundesamt für Wohnungswesen (ed.), *Wohnbauten planen, beurteilen und vergleichen. Wohnungs-Bewertungs-System WBS,* Schriftenreihe Wohnungswesen Bd. 69, Grenchen 2000.

WBS assessment criteria and their weight

Flat (W1)		**Estate (W2)**		**Location (W3)**	
Nett surface area	3	Range and types of flats	2	Nearby playground	3
Number of bedrooms	3	Possibility to rent extra living and working space / rooms	3	Park / woodland	2
Versatility	3	Flexible size	2	Public transport stop	8
Furnishability of rooms	3	Flat access area	2	Town or village centre	8
Windows in living rooms/bedrooms	2	House access area	2	Nursery school / Elementary school	3
Location of dining area	2	Utility rooms	3	Middle and Upper Schools	1
Furnishability of dining area	2	Private storage space	2	Social services	1
Connection to kitchen area	2	Communal storage space	1	Nearby recreation area	3
Windows in kitchen area	1	Communal rooms	1	Regional centre	7
Furnishings in bathroom area(s)	1	Communal outside area	4		
Windows in bathroom area(s)	1	Pedestrian and bicycle paths	2		
Potential for alternative placement of furniture	4	Car parking facilities	1		
Flexible organisation of rooms	2	Graduated exposure to the public	1		
Flexible floor plan	2	Noise immission / noise insulation	2		
Choice of access route(s)	2				
Private outside area	3				

Perspectives

By ratifying Agenda 21 and the Rio Declaration, Switzerland undertook to define and implement sustainable development policies. This commitment also includes future developments in spatial planning and housing. The Swiss government's strategy, Sustainable Development 2002 *(Nachhaltige Entwicklung 2002),* defines three key areas – i.e. Development of Urban Areas and the Built-Up Environment, Social Cohesion and the Environment, and Natural Resources – in which policies for the development of urban areas and the built environment can contribute towards this objective.

Challenges to Swiss spatial planning and housing policies

In 1992 Switzerland ratified Agenda 21 and the Rio Declaration, thereby undertaking to define and implement sustainable development policies. Important stages on the way were the adoption in the 1999 revised Federal Constitution of an article on sustainable development, and a strategic paper issued by the Swiss government,[22] which defines ten areas of action and twenty-two specific policies. However, while one of the areas of action is dedicated to spatial development and housing, no specific task or measures have been directly attributed to the field of housing policy although, touching on various areas, it is faced with a multitude of challenges.

Area of action: urban areas and the built environment

Housing is a fundamental need and plays a crucial role in people's well-being and quality of life. While the increase of living surface area may provide a better quality of life for those who can benefit from this development, it also contributes to the expansion of built-up areas and to urban sprawl at the expense of recreation and agricultural areas. In the 1990s three quarters of all new builds were detached houses. Wherever new housing estates are built on greenfield sites, they have to be developed and connected to the centres and recreation areas, which are being pushed further out. Traffic land area increases; the well-being and freedom of movement of ever wider circles of the population are curtailed by increasing traffic.

Spatial planning requires new recipes to defuse the conflict between the individual need for more living space and the priority level interest of sustainable use. For this purpose, the Federal Office for Spatial Development has been exploring whether and in what way market-economy instruments might be used to improve the implementation of spatial planning objectives and to give spatial planning greater impact. Among possible solutions being discussed are taxes to promote high-density housing, and certification to restrict land consumption. Swiss housing policy, moreover, can make a contribution to this area of action if subsidies focus on renovations, and if only new settlements designed to use land economically receive support. Moreover, recommendations can be made and positive examples provided concerning the development of the immediate and more distant vicinity to encourage neighbourly relationships and the establishment of local social networks. It is a fact that attractive neighbourhoods foster contacts in the immediate vicinity and help reduce leisure traffic.

Area of action: social cohesion

A functioning housing market and complementary subsidies from the federal government, some cantons and municipalities all contribute to put Switzerland among the top countries worldwide with regard to quality of housing. According to a recent survey, most residents are happy with their housing situation and would agree with the above, positive assessment. Nevertheless, considerable differences, both financial and spatial, do exist. It is predominantly immigrant or non-Swiss households who have to content themselves with significantly less space than the local residents. Housing costs vary greatly and often present a serious problem to people at the lower end of the income ladder. People with a high social status tend to gather in highly desirable locations, while members of disadvantaged population groups can be found significantly more often in neighbourhoods with high noise immissions, substandard air quality and deficient infrastructure. It is an important task of Swiss housing policy to counteract spatial segregation and redress this imbalance of access to the resource of ‘housing’. If the social divide increases, it will not only be ‘residential peace’ that is at stake. Alongside social stability, good quality housing is an increasingly important factor in the international location competition.

The current Federal Housing Act provides suitable instruments to meet this challenge. They address the non-profit housing sector and ensure the long-term production or renovation of reasonably-priced, quality flats. This policy is expected to help preserve the lively non-profit market segment open to wide circles of the public, also providing various housing-related services beyond housing as such, and thereby playing an important equalising role on the market. Wherever existing residential housing and neighbourhoods have been drawn into a downward spiral of high fluctuation and vacancy-rates owing to unsuitable locations, structural deficits, imbalanced residential profiles, neglected maintenance and bad reputations, the housing research programme can be called upon to establish analyses of the situation and propose policies to stabilise such trends and to improve the quality of housing and of the residents’ lives. The Federal Office for Housing has made it its task to evaluate results from these projects and to pass on this information to those responsible for such problematic neighbourhoods.

Area of action: the environment and natural resources

Any form of construction affects the environment and requires resources and energy. Buildings consume materials and space; their maintenance consumes energy and their demolition produces waste. Environmentally sustainable construction means that negative impacts on the soil, the air and water are kept to a minimum, and that as little hazardous waste as possible will result. One way of achieving this is by avoiding new builds whenever possible, renovating or redeveloping existing buildings instead. If a new build is unavoidable, compact and simple forms will reduce the consumption of materials and energy. Moreover, an ecological contribution can be made by selecting renewable, emission-free and locally produced construction materials, which must be manufactured in such a way that parts with a shorter life-span can be replaced at reasonable expense.

Most people spend up to ninety per cent of their time inside buildings, with their homes being the place where they spend most of their time. It is all the more important, then, that residential buildings should have a pleasant, pollutant-free interior. The selection of suitable construction materials, fixtures and fittings and the way in which inhabitants air their homes help attain this objective.

Energy is becoming more and more of an issue, not only because the depletion of fossil fuels will lead to ever higher prices; the combustion of fossil fuels also contributes massively to air pollution. The long-term objective of our energy policy demands a considerable reduction of per-capita energy consumption. Currently, every person living in Switzerland consumes some six thousand Watt of energy for their activities. The vision of a two-thousand-Watt society[23] is based on the insight that only about one third of today's energy will be available long-term and that three-quarters of that energy (1500 W/capita) will have to come from renewable sources.

The construction and housing sectors can make an important contribution towards these objectives. However, the consumption of grey energy for the production and transportation of construction materials, and the running and maintenance of the buildings themselves (lighting, ventilation, heating, hot water) needs to be reduced. What is required here is not only technological innovations but also different behavioural patterns, both among all those involved in construction, as well as among those who use the buildings! Hopefully these new patterns will be adopted on a voluntary basis and incisive (and possibly painful) steering policies can be avoided.

Notes

1 See Bundesamt für Statistik (ed.), Beat Jordi, *Bodennutzung im Wandel. Arealstatistik Schweiz,* Neuenburg 2001.
2 See Bundesamt für Statistik (ed.), Werner Haug, Martin Schuler, Philippe Wanner, *Räumliche und strukturelle Bevölkerungsdynamik der Schweiz 1990–2000,* Neuenburg 2002, p. 41.
3 See *Der Bund, kurz erklärt,* Schweizerische Bundeskanzlei, Bern 2005.
4 Literally: 'comradeship in oath' [translator's note]
5 See Bundesamt für Statistik (ed.), Werner Haug, Martin Schuler, Philippe Wanner, *Räumliche und strukturelle Bevölkerungsdynamik der Schweiz 1990–2000,* Neuenburg 2002, pp. 7–8.
6 See *Erhebungen Arealstatistik,* Bundesamt für Statistik, Neuchâtel 1979/85 and 1992/97.
7 See *Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, World Population Prospects: The 2002 Revision and World Urbanization Prospects: The 2003 Revision,* http://esa.un.org/unup, 13 July 2005.
8 The Swiss Federal Statistical Office defines the term 'urbanisation' on the basis of commuter networks and the size of core cities and their conurbations.
9 See Délégation à l'Aménagement du Terrritoire et à l'Action Régionale DATAR (ed.), Céline Rozenblat, Patricia Cicille, *Die Europäischen Städte – Eine Gegenüberstellung,* Paris 2003.
10 See Andreas Campi, Christian von Büren, *Bauen in der Schweiz. Handbuch für Architekten und Ingenieure,* Basel 2005, pp. 62 ff.
11 See Schweizerische Vereinigung für Landesplanung VLP-ASPAN (ed.), *Raumplanung in der Schweiz,* Bern 2004.
12 See Bundesamt für Raumentwicklung (ed.), *Raumentwicklungsbericht 2005,* Bern 2005.
13 The Report on the Principles of Regional Development in Switzerland *(Grundzüge der Raumordnung Schweiz)* was presented to parliament in 1996. It was based on the fundamental concept of a network of cities and rural spaces: networks – not only with regard to transport – were intended to reduce and mitigate imbalances and potential for conflicts between the four parts of Switzerland, between town and country, the centre and the periphery.
14 See Bundesamt für Raumentwicklung (ed.), *Raumentwicklungsbericht 2005,* Bern 2005.
15 See Bundesamt für Statistik (ed.), *Gebäude, Wohnungen und Wohnverhältnisse,* Eidgenössische Volkszählung 2000, Neuenburg 2004.
16 [Translator's note: in Switzerland, banks are the usual source of mortgages, building societies popular in the U.K. being virtually unknown.]
17 See Reinhard Schüssler, Philippe Thalmann, *Was treibt und hemmt den Wohnungsbau?,* Housing Bulletin Vol. 76, Bern 2005.
18 François Höpflinger, *Traditionelles und neues Wohnen im Alter,* Age Report 2004, Zürich 2004.
19 Outpatient and home-care services.
20 This is a controversial constitutional duty. Recently there have been several attempts to abolish the Swiss government's promotion of residential construction, or to transfer responsibility to cantonal governments. At the beginning of 2005, two parliamentary proposals were pending which demanded the abolition of this type of housing promotion.
21 [English section of the SFOE homepage, accessed by the translator on July 4, 2006, at www.bfe.admin.ch/energie]
22 Schweizerischer Bundesrat, *Strategie Nachhaltige Entwicklung 2002,* Bern 2002.
23 These 2000 Watts refer to a mean annual total per capita energy consumption. 2000 Watts correspond to the consumption of 2 000 Joules/second or 172 800 kJ/day (or 48 kWh/day).

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P. 11 Residential and studio house Hagenbuchrain, Zurich, 1997–1998 (W3 architects, Zurich). – Photograph: Hannes Henz, Zurich.

P. 17 Limmattal settlement area, Wettingen, 2006. – Photograph: Hannes Henz, Zurich.

P. 21 Sulzer Escher Wyss industrial estate, Zurich, 2006. – Photograph: Hannes Henz, Zurich.

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