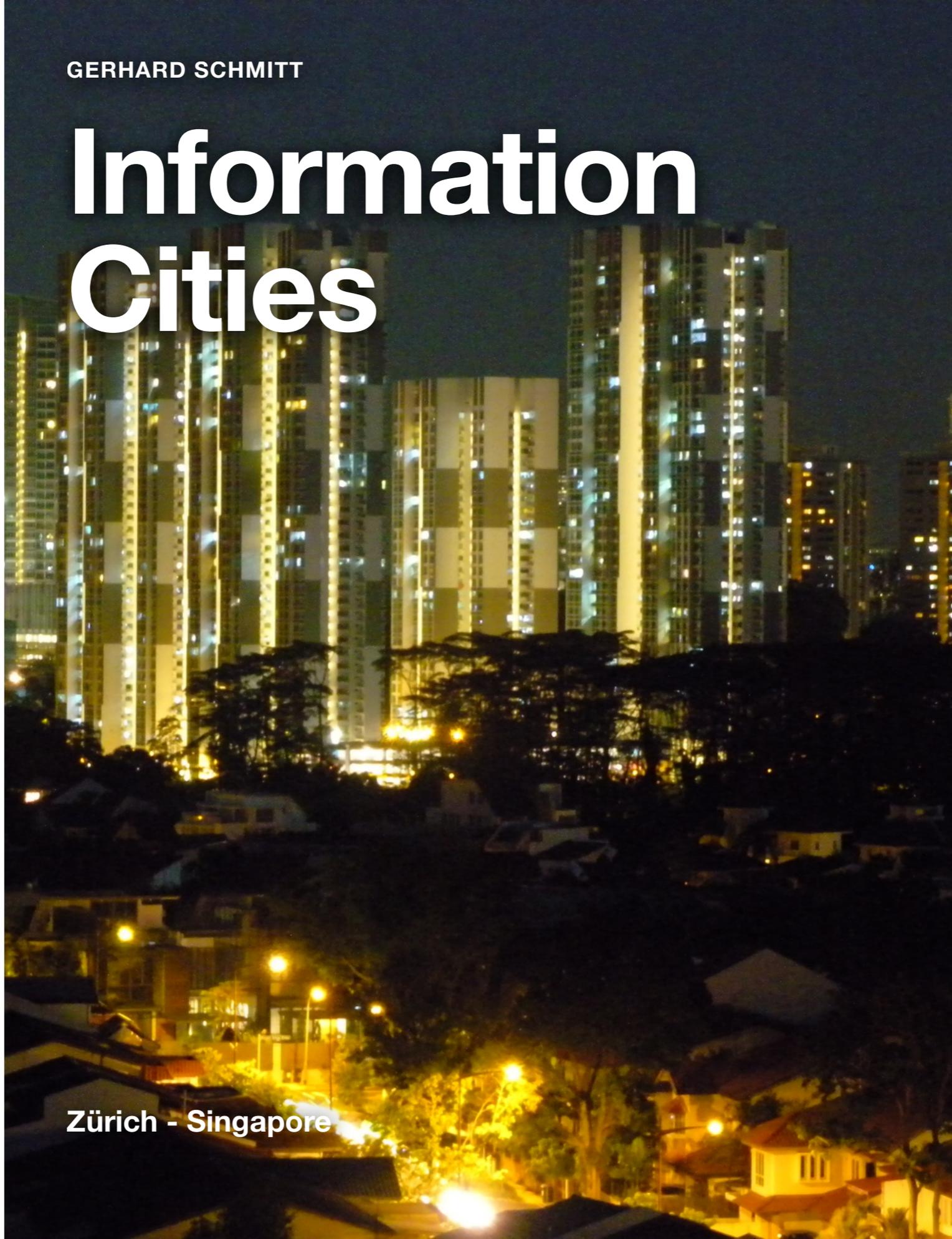


GERHARD SCHMITT

Information Cities

Zürich - Singapore



System: habitat

Buildings made for people quickly reach a high level of complexity and as such form complex information systems. The function of providing a habitat for humans has taken on different forms over time. From the early examples of simple shelters, to sustainable and resilient structures in rough environments to multifunctional mega structures in Asian cities, humans as individuals and as collective communities have shaped their habitat. Information Systems have become an essential component of each new building.



Habitat

DEFINITION

Habitat describes the human living and working environment. For each person, it is the centre of her or his activities. Seen from the outside, it resembles a networked environment. Seen from the inside, it appears as being in the centre of human activities.

Information increasingly influences the human habitat. Whereas in early human settlements the protection from and the fight against the elements was key, modern settlements shape the environment.

The UN [Global Report on Human Settlements](#) describe the development in regular intervals.

The **human habitat** is the place where we spend our life. Every city, village, single house or exposed research station is part of the human habitat. In broader terms, human habitat relates to human settlements and to housing in particular. The United Nations produced the first **Global Report on Human Settlements** in 1986. The titles of the following reports were „An Urbanising World“ (1996), „Cities in A Globalising World“ (2001), „The Challenge of Slums“ (2003), „Financing Urban Shelter“ (2005), „Enhancing Urban Safety and Security“ (2007), „Planning Sustainable Cities“ (2009), „Cities and Climate Change“ (2011). The reports come increasingly to the conclusion that the integration of all the factors described as chapters in this book - especially the stocks and flows - is crucial for the creation of long-term sustainable and liveable cities.

Focusing on the housing aspect of the human habitat yields the biggest differences between cultures, climates, stages in the development, social preferences and potential for adaptation.

Focusing on the relation between housing and information, information architecture, and information city reveals a very large potential for the future in each place on earth. This potential can be realised if information is used as the enabler of a better habitat, in which the individual dwelling, apartment, house, settlement, or city interacts intelligently with its environment.

Housing

Every person needs housing. In the past, housing and working were separated after the combination of living and working in polluted areas of the industrialised cities had led to deplorable health and social conditions. The total separation of the activities, however, led to the known disadvantages of suburban spread, increased need for mobility, and single purpose settlements. Information technology offered a first instrument to build a bridge between living and working, and thus to take a pragmatic approach towards combining the advantages of both situations. In Switzerland, the **Manto Report** from 1987 was a first attempt to demonstrate these possibilities.

At the Future Cities Laboratory, Prof **Sacha Menz** and his research team focus on „Strategies for optimising the spatial organisation of high density urban areas“ By Ben interdisciplinary exploration of the „relationship between density and liveability with focus on the use, and appropriation of common spaces in Singapore high-rise housing“. The group assumes, that „National economic growth combined with forward strategic planning have been instrumental in the shaping of Singapore’s residential architecture since the early 1960s. As a result, Singapore’s already limited land area now comes under increasing pressure. The situation demands ever-greater optimisation of land use at urban, site and building scales. This, in turn, places pressure on the balance between functional effectiveness and liveability of the everyday built fabric. Common spaces play a pivotal role in

maintaining this balance. First, through their capacity to structure interaction of inhabitants, such spaces have a regulatory effect on the sense of density in the immediate dwelling environment.

Second, common spaces positively impact on the liveable quality of domestic spaces, independent of standards of living of the residents.

The ETH Chair of Architecture and the Building Process, together with ETH Centre for Research on Architecture, Society & the Built Environment (CASE), aim to collaborate with relevant Singapore-based institutions to develop an interdisciplinary strategy for exploring significant housing typologies that have emerged over the past fifty years in Singapore. A set of four empirical case studies, focused on different HDB housing estates, will combine quantitative analysis of building and site characteristics with qualitative ethnographic methods. By investigating the quantitative characteristics and spatial organisation of the building and its site, and correlating this to the role of common spaces, we seek to gain greater understanding of the liveability of cities. This gives rise to a set of specific issues concerning the way of common spaces are constituted, used and appropriated, and how this impacts on the overall liveability of particular estates. The anticipated findings of this study have the potential to contribute to the design and production of housing in Singapore as well as other high density living contexts.“

Forms of animal Habitat

Animal habitat and animal housing are areas of intensive research since centuries. Obviously, animals do not have architects or city planners, but the resulting structures sometimes remind us of human settlements. The role of data and information in the construction of animal habitat is not fully explored, but definitely there must be a way to store the necessary construction instructions in a consistent way.

Gallery 9.1 An animal habitat



The hornet habitat. Germany, May 2, 2007. Photo: Gerhard Schmitt



Forms of human Habitat

The shape and form of human habitats has changed dramatically over time. Major forces are climate, landscape, transportation potential, available building material, available financial resources, and skills and knowledge of the builders. The forced or voluntary restriction to few materials and colours creates a uniform and - for the human eye - appealing settlement pattern. Yet the conditions in these settlements are often not satisfactory.

Gallery 9.2 Forms of Habitat - Sudan



A settlement from above. Sudan, March 11, 2007. Photo: Gerhard Schmitt



Low-density Habitat

Although mostly urbanised, Switzerland and Europe in general are still characterised by a low-density habitat. The majority of the population lived in low-density settlements for centuries, before an accelerated move into the industrialising cities occurred in the 19th century. The low-density habitat, reaching from solitary castles to suburbia, is often the dream for people to live in. With information technology, these habitats may gain a new life.

Gallery 9.3 Low-density human habitat



Relatively low density rural settlement in the Swiss Alps. Einsiedeln, December 24, 2008. Photo: Gerhard Schmitt.



High-density Habitat

Typically, we associate high-density with vertical cities. While Zürich reaches a density of more than 4400 people per square kilometre in its downtown area, Singapore has twice the density. This is achieved by constructing high-rises in close vicinity in the central business district and by adding residential high-rises of up to 55 floors adjacent to the CBD.

Gallery 9.4 High density human habitat



Construction of the high density Marina Bay commercial and hotel development in Singapore.

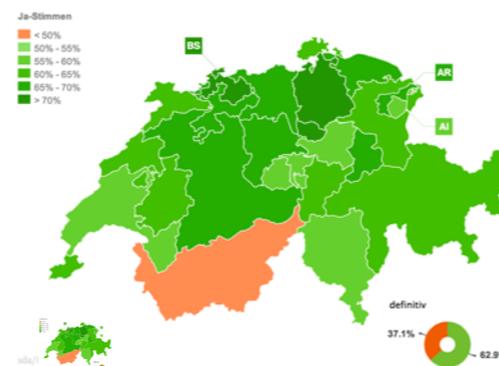


Habitat and Information Architecture

The relations between the habitat and Information Architecture are manifold. The more people know about and their habitat, the more informed they are and can make decisions that are based on more than gut feelings. This is not to devalue the importance of intuitive decisions, if this intuition has been built up over years and generations based on facts. Rather, it is a plea for a more complete and better informed decision-making.

On March 3, 2013, the Swiss population voted on the revision of the „Raumplanungsgesetz“, the equivalent to a federal zoning law. This is a surprising fact in the first place, because the zoning law authority in Switzerland belongs to the villages, communities, and cities. Yet it became clear over time – through communicated data and information – that the communities had reserved large areas of previously undisturbed agricultural or natural areas for building activities. The population was informed, that every second one square metre of cultural land was built over in Switzerland. The population knew through data, information, and personal observation that clean water, clean air, and a pristine landscape were some of the most important assets of the country – in terms of tourism, and, more important, in terms of the high liveability standards of the country. This meant that the large „Baulandreserven“ - building zones - which the communities had dedicated for development, would be detrimental to the overall

and the individual appearance of the country. Although individuals had an interest in converting their previous agricultural land into building land and thus being able to make significant profits, the overall vote was overwhelmingly against a continued suburbanisation of the country. The initiative they voted for went so far as to request that sensitive natural areas that had been zoned for building activities would be de-registered for those activities and thus could cause considerable financial harm to the individuals.



Just a few months earlier, the Swiss population had also voted against the excessive percentage of „Zweitwohnungen“ or second residences, mostly owned by foreigners. Again, data had informed the population that in some mountain villages the majority of the buildings were occupied only during a few weeks per year, thus ruining the community spirit of the villages. This vote was particularly interesting, as the urban population, who wanted to preserve the impeccable quality of the Swiss mountain villages and landscape for future generations - but owning most of the „Zweitwohnungen“ - was in contrast to some of the mountain villages, who voted against the restriction of „Zweitwohnungen“. The villages' reasoning was, that it would harm the local building industry if the restriction was accepted. Interestingly, the only Canton who voted against the „Raumplanungsgesetz“ was the one that was affected most by the „Zweitwohnungsinitiative“.