

Design Manual Accessible Architecture

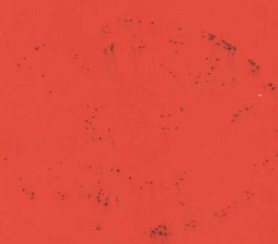
无障碍建筑设计手册

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鄢 格 译



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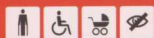
Age and disability-friendly planning and building in the 21st century
21世纪的新兴建筑模式——适用于老年人和残疾人的建筑

Edited by Joachim Fischer and Philipp Meuser

(德) 乔希姆·菲希尔 菲利普·莫伊泽 编

Translated by Yan Ge

鄢 格 译



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Steps are a very obvious barrier, both in buildings and public spaces.

无论是在建筑还是公共空间内，台阶都是很明显的障碍。

Looking back to the future

回顾过去 走向未来

LutzHeese

卢茨·汉斯

“We would like to put it on record here, that we are born to live in common: our society is like a vault of stones placed together, which would collapse if one did not sustain the other.” This quotation from Seneca, the Roman philosopher and statesman, is most appropriate to the present publication *Accessible Architecture. Age and disability-friendly planning and building in the 21st century*. The architect creates the space or, to quote Seneca, the “vault of stones”, within which we daily move. And because architecture is omnipresent in our lives, all of those who produce it, directly or indirectly, have a duty to society as a whole. Alongside architects, these individuals include interior designers, landscape architects, town planners and, above all, the political decision makers, developers and users.

A society's (self-)image is revealed not least in how it treats those people who particularly need its help. To a very special extent, this includes older or disabled people. As such, the question is not whether barrier-free building is necessary, but rather how it can best be implemented. The challenge lies in creating a social framework which enables human interaction, thus meeting the needs of today's society. However, it is not only about solidarity but, above all, about facts which make barrier-free building and age-friendly architecture into one of the most important issues for the future. We live in privileged times which offer us – at least in Europe – longevity which is unprecedented in human history. And a society which is constantly aging must of necessity engage with the subject of barrier-free building. The Bavarian Chamber of Architects has already been aware of the social significance of barrier-free building for many years. As far back as 1984, the Bavarian Chamber of Architects, in conjunction with the Bavarian Ministry for Work, Social Affairs, the Family and Women set up an advisory office for barrier-free building. Since then, it has been

possible to initiate and achieve a great deal for older or disabled people. The best example of this is the work *Planning principles for barrier-free housing on the basis of DIN 18025* (Parts 1 and 2) which, with just under 90,000 copies printed, has become a bestseller. The principles were published in 1992 by the Bavarian Chamber of Architects, in cooperation with the Bavarian Ministry for Work and Social Affairs, the Family and Women and the most senior building authority in the Bavarian Ministry of the Interior. They are attached to this publication which I hope finds numerous readers. I am confident that this publication makes a further important contribution to improving the future quality of life of our society.

The author is the President of the Bavarian Chamber of Architects.

罗马哲学家和政治家西尼加曾说过：“社会就如同是由许多石块堆砌而成的，人类生来就共同居住在这个大屋顶下。”用这句话来描述本书，再恰当不过。建筑在人类日常生活中无处不在，而建筑师，那些“建造社会大屋顶的人”有责任将整个社会打造成一个统一整体。

评价一个社会往往就要看其如何对待那些需要帮助的群体，尤其是老年人和残疾人。优越的生活环境使得人类的寿命越来越长，因此老年人会越来越多。从这个角度来看，再去讨论无障碍建筑是否有必要已毫无意义，重要的是如何让其更好的服务于人。因此，设计师所面临的挑战就是如何满足当今社会的需求、创建自由活动的无障碍空间。

早在1984年，巴戈利亚设计师协会就提出了无障碍建筑的重要性，并同其他组织成立了无障碍建筑咨询机构，旨在为残疾人和老年人服务。1992年关于无障碍建筑原则的第一本书籍出版之后，备受欢迎，90000册全部售空。因此我坚信，这本书在改善我们的社会生活质量方面，会大有帮助，一定会吸引更多的读者。

巴戈利亚建筑师协会主席



Stepless access: all of us, even the able-bodied, find it useful sometimes in our lives.

在日常生活中，无台阶入口同样受益于身体健全的人。

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Stroller owners can experience just as many mobility problems as wheelchair users.

推婴儿车的人有时会同轮椅使用者一样，面临行动不便等问题。

Essays 序言



Goodbye to the Wheelchair Ramp

A plea for barrier-free planning and building as a matter of course

Philipp Meuser

告别轮椅坡道——非障碍建筑

菲利普·莫伊泽

Barrier-free architecture. This smacks of old people's home, housing for the disabled or hospitals. This term is still associated with buildings for "disadvantaged fringe groups". But barrier-free architecture is valued by far more people than the disabled or aged, for whom it eases participation in private and social daily life. Because being disabled does not only mean that one has to get to grips with one's environment with permanent physical constraints. A disability may also relate to a situation. For example, when one has to climb a staircase, loaded down with suitcases; when one cannot get the shopping trolley from the supermarket to the car in the car park; when one stands helplessly in front of a staircase with a pram or one does not know how to get the pram from the platform into the tram carriage. That is why there are now low-rise trams and buses with appropriately modified platforms. The new technology being used in public transport is an excellent example of just how much broader the definition of "disabled" has become – and how universal the solutions for barrier-free access can be. In this case, there is a rule of thumb: if a small child can get on without difficulty, it is just right for an old person with a walking stick; that which helps a mother with a pram is also of assistance to people with crutches, walking frames or wheelchairs.

Therefore, it is no longer a question of fulfilling the politically correct and meanwhile completely unrealistic demand of making a building "wheelchair-friendly", but rather a question of creating a freedom from barriers which is not stigmatised or intended to serve as an alibi but which is a natural matter of course.

What barrier freedom means

German legislation also reflects this credo. In the so-called Equality for Disabled Persons Act, which is supposed to regulate implementation at national level, it is stated that: "Buildings and other structures, means of transport, technical tools, information processing systems, acoustic and visual sources of information and communication facilities and other designed areas of living are barrier-free if they are accessible to and usable by disabled people in the normal way, without special difficulty and completely without assistance."¹

Barrier-free building means that the world we create ourselves – from pavement to house to light switch – must be so designed that it is open to all people, irrespective of their given physical condition or age, without assistance and without restriction. As such, the



Everyday barriers: that which appears amusing and curious at first glance is often an obstacle for disabled people.

空间中有趣而引人注目的摆设往往就成为了残疾人的障碍。



Disabled WC at Tashkent International Airport.

塔什干国际机场残疾人专用洗手间。



Uninsulated district heating pipeline in a residential area.

小区中供热系统管道处理。

barrier-free design of human living space has long been defined as “building and design for all” or “people-friendly building”. Numerous reports and expert opinions from Germany and the European neighbouring countries have concluded that an environment accessible without barriers is absolutely essential for around ten per cent of the population, necessary to some extent for up to 40 per cent, and simply comfortable for 100 per cent.² Barrier-free building therefore means not only building without thresholds, steps and stairs, but planning and building with the aim of creating an environment which is functional, and both easily accessible and usable. One good example for this simple rule is the toilets in public buildings.

Building for a new society

While the need for convenience is not restricted to a minority, barrier-free building no longer represents a design challenge for fringe groups, but is rather the expression of the emancipation of society as a whole. This is already evidenced in the official language for, in using the term “barrier freedom”, it achieves general validity, indeed, an egalitarian character. Those people whose capacity to participate in society was once

denied, in that they were belittled as “idiots”, “mad-men”, “cripples” or “half-wits”, are now people with impairments, who have long fought against their exclusion and have had to battle hard to achieve social integration. In 1919, for example, Wilhelm von Kügelgen, the adjutant of General Field Marshal Paul von Hindenburg lamented on seeing those damaged in the First World War’s rain of steel: “The individual is measured against the mass and, where a major element is missing, is punished with the title of ‘cripple’, used entirely in the old sense of inferiority [...]”, and he then demanded that: “Therefore, we do not wish to call those whose bodies have been struck by the axe of fate ‘cripples’”.³

The consequences of the First World War were instrumental in disabled people being recognised as a social group for the first time. At that time, numerous injured survivors thronged the streets of the Weimar Republic – as beggars, outcasts and pariahs. Their miserable impoverishment was immortalised in unsparing portraits by artists such as George Grosz or Otto Dix. After the First World War, organised medical field services, which first appeared during the German-Danish war of 1864, gave to society a sizeable social



Small ad in a magazine c. 1920: after the First World War (1914–1918) the demand for prosthetics increased because of the high number of war casualties.

杂志上的一则小广告写着：第一次世界大战之后，要求对战争伤亡人员补偿的呼声越来越高。

group which had not existed in this form previously: invalids.⁴ Civilian forms of crippling disfigurement in the shape of physical and mental disabilities had previously been locked up in asylums or institutions, out of society's sight. Orthopaedic medical institutions which developed in the 18th century out of the predominantly clerical tradition of plague houses and monasteries, prepared the ground for the institutionalised handling of sick or disabled fellow men.

The term “physically disabled” appeared for the first time in 1925 and may be seen as an indication of society's gradual opening, now accepting these people and trying to integrate them. The generally valid principle of enabling each person to lead an independent and self-determined life at all times marks not only a social transformation, but also one of the great challenges of the second German republic.

The guidelines for this challenge were laid down right at the start, in the first three Articles of the German Basic Law, valid since 1949. But, alongside the rights which disabled people may demand under law, a second development will lead *nolens volens* to a gradual transformation of the built material

environment: our society is currently undergoing an aging process of hitherto unprecedented dimensions. Thanks to medical research, the life expectancy of the inhabitants of the western world is constantly increasing, and they are becoming ever older. For this reason alone, there are always more people who require care and assistance; people who, because of their age are restricted – therefore disabled – and need support in order to participate in society. Parallel to old age, demographic statisticians have noted a constant reduction in the birth rate which is already too low to maintain the status quo. The population of the western industrial nations is shrinking. In the foreseeable future, the disparity between many old people and few young will lead to tectonic shifts which will destabilise not only the hitherto reliable pension and healthcare systems.

In order to overcome the constantly growing need for care and support within society which goes hand in hand with over-aging, new approaches to housing and living are required, in order to integrate old and young equally. As such, the Federal Government has specifically created an action campaign for multi-generational houses.



Mobility aids for different degrees of walking disability: crutches produced by Ganymed.

Ganymed生产的拐杖，供不同程度的行动障碍者使用。



Walking frame produced by the Belgian manufacturer, Vermeiren.

比利时厂商Vermeiren生产的供伤残人使用的助行架。



X3 Active wheelchair manufactured by Xchange.

Xchange生产的第三代轮椅。

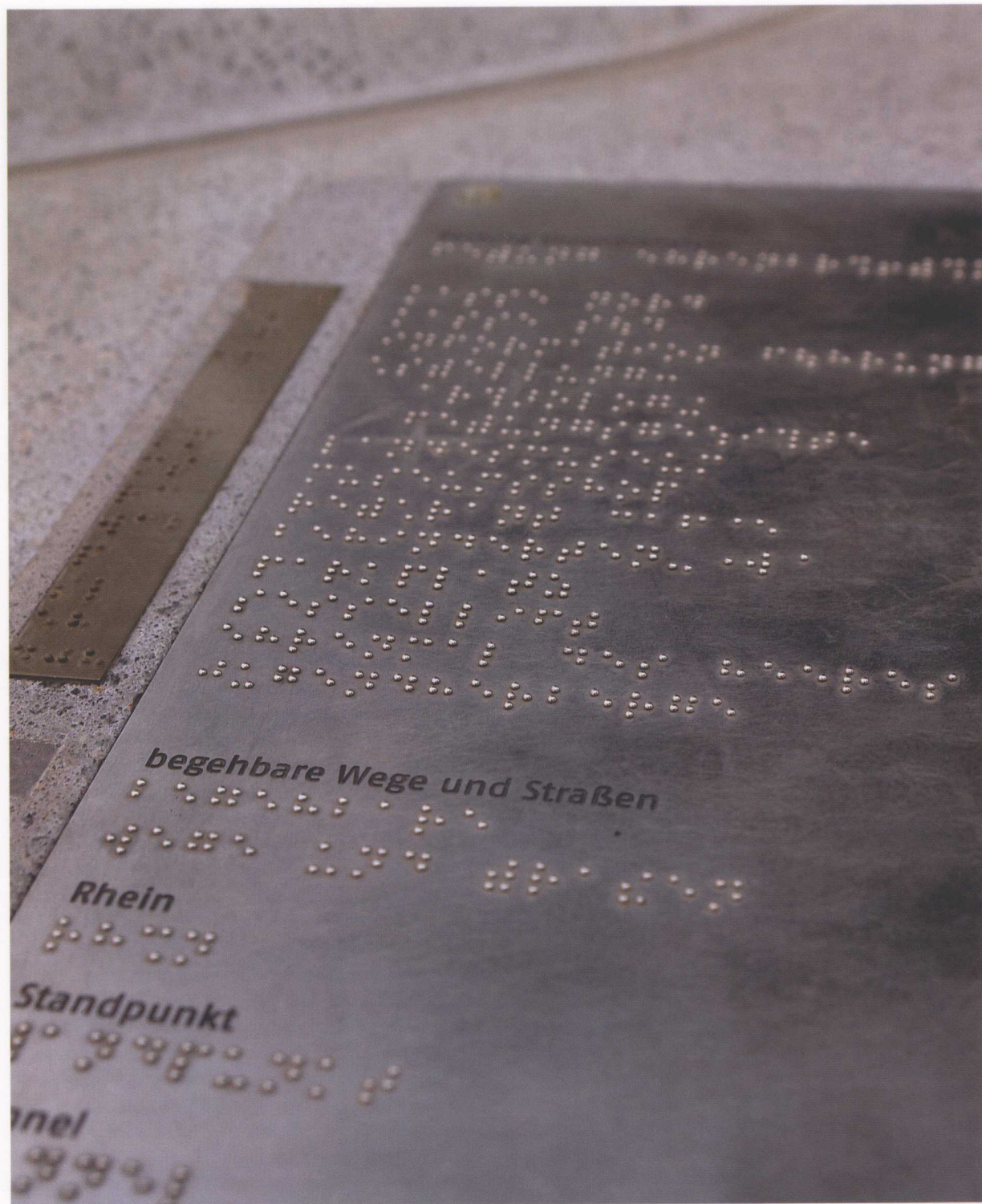
The lame walk and the blind see

From visual, mobility and hearing aids to wheelchairs, there is an entire industry dedicated to ensuring that the lame can walk and the blind can “see”. Thanks to inventions such as Braille or prosthetics, they are once again in a position to take part in public life and organise their everyday lives independently. What still needs to be done, on the other hand, is the corresponding adjustment of the hardware used in these everyday lives – namely the architecture. That the needs and demands of disabled people serve here as the guiding thread goes without saying. The compendium of legislative and normative regulations which characterises the everyday built world already reflects this view. While “barrier-free building” was equated with the largely inappropriate term of “building for disabled people”, a transformation of consciousness has been achieved since the amendment of the German standards DIN 18025 in 1992, DIN 18024-2 in 1996 and DIN 18024-1 in 1998. DIN 18024-1 regulates the design of common spaces such as streets, roads and squares, through to traffic systems and parks – in short, everything which concerns public areas where movement takes place. While DIN 18024 relates to

common spaces, both parts of DIN 18025 formulate design specifications for housing in all types of housing construction. This includes regulations on wheelchair-friendly planning, implementation and installation of housing in new buildings and the corresponding requirements in conversions and modernisations.

Alongside safety and energy efficiency, barrier freedom is one of the most important issues of more recent, contemporary architecture. As such, solutions are being sought in various areas which are not only “politically correct” but which also above all serve the actual purpose of making the ergonomic design of movement processes in everyday life easier. This issue has long since been reflected in the federal states’ building regulations and has meanwhile become an important element of public-sector construction projects. In the area of private housing too, developers and architects must increasingly face the challenge of creating housing and living space of high quality which already meet the requirements of tomorrow. Innovative concepts which have a cross-generational function are the order of the day.

“In fact an architect must almost certainly assume that



Ehrenbreitstein Fortress near Koblenz: use of Braille as part of the information, waymarking and orientation system (designed in collaboration between Adler & Schmidt Kommunikations-Design and Meuser Architects BDA).

科布伦茨附近的普鲁士城堡上部分信息、路标和定位系统设计运用了布莱叶盲文（由阿德勒·施密特通讯和莫伊泽设计建筑公司共同制作）。

a	b	c	d	e	f	g	h	i	j
⠁	⠃	⠉	⠙	⠑	⠋	⠗	⠓	⠏	⠗
k	l	m	n	o	p	q	r	s	t
⠅	⠇	⠍	⠎	⠕	⠏	⠒	⠙	⠑	⠞
u	v	w	x	y	z	ß	ü	ä	ö
⠥	⠺	⠽	⠭	⠽	⠵	⠿	⠺	⠿	⠺

Braille was invented in 1825 by the Frenchman, Louis Braille. It is based on a system of six dots combined in different patterns. Practised readers can read up to 100 words a minute.

布莱叶盲文由路易斯·布莱叶于1825年发明，主要原理就是将六个原点以不同方式组合。熟练者每分钟可读出100个单词。

he is designing for an ‘unknown person’; that the housing must be so flexible that it can always respond to society’s dynamic and always remains economically interesting.”⁵ Architects are therefore demanding a building culture which is not only oriented on minimum door widths, but also produces living space which corresponds with all life situations and phases of the inhabitants. This approach to planning housing accommodates all of those people whose mobility is temporarily impaired. This includes, for example, people who are weakened or bedridden for an extended period due to illness. With the concept of barrier-free housing, they can be integrated into everyday life. For planners, this means designing living space in such a way that the floor plans can be altered at some later date, and that retrofitting can be undertaken without great effort.

Intelligent planning and a generous degree of conversion can also transform those properties such as old buildings, terrace houses or maisonettes which initially appear only partially suitable for people with limited mobility into barrier-free living spaces.

Best Practices

From cradle to grave: multi-generational houses are designed with a complete lifecycle in mind. They offer a home and suitable space for people in every stage of their lives. In principle this is a contemporary makeover of a way of living which has also predominated in our latitudes for millennia, where several generations live together under one roof – in towns or, more frequently, in rural areas.

The new multi-generational house in Stuttgart combines several such traditions. It is an urban property, which was built using funding from the Rudolf Schmid and Hermann Schmid Foundation (page 144). On the street side, the building, erected by Kohlhoff Architekten, forms the end of a block, while on the other side, it frames a courtyard. With a total area of 6,000 square metres, the house is a neighbourhood meeting place for young and old, for families and singles, for locals and newcomers. There is a children’s daycare centre, a mobile care service for the elderly and ill, and a centre for mothers and families. “The house thus combines private and social



Floor flush shower with central inlet (manufactured by Bette).

Bette公司生产的带有中央入水口的地面淋浴设施。



Door handle for the visually impaired with Braille panel on the underside (manufactured by Karcher).

Karcher公司生产的门把手，内侧安有刻着布莱叶盲文的面板，方便弱视者使用。

amenities, including a café and a second hand shop and unites all of these in a functional manner through barrier-free accessibility and infrastructure, which have themselves been designed in loving detail.”⁶ A somewhat unusual example of barrier-free building is the house in Bordeaux, designed by the Dutch architect Rem Koolhaas (page 188). A hydraulic hoist has been installed inside this three-storey building, allowing the wheelchair-bound house owner to access every floor without difficulty. Another example is Paul de Ruiter’s Villa Deys (page 262).

What all of these buildings have in common is that their excellent architecture blends effortlessly into their surroundings and does not advertise their additional features. That even historical buildings or unattractive installations are being converted into barrier-free spaces is evidenced by the Bode-Museum on the German Museum Island. This successful conversion demonstrates how heritage protection and barrier freedom can be merged into a functional yet aesthetic whole. In the meantime, after all, barrier-free travel has also become a key issue within the tourism industry.⁷

Architecture determines what makes sense

Just as public transport does not need to be reinvented because of barrier freedom, neither does architecture. The need for age-appropriate housing is not a reason for a new building boom, nor is the wholesale demolition of older buildings necessary. The challenges presented by over-aging and the implementation of barrier freedom are not only an issue for the housing sector.

It is society as a community which is called on to face the challenge, although it should be approached calmly. Hectically laying down action plans based on statistical forecasts has never been worthwhile and here, the use of multi-generational housing above all shows that the key to living together on equal terms, independent of differences in physical constitution, is human interaction. It is a greater sense of family and community which is needed here, rather than a conscious way of life, for without a willingness to interact with understanding and demonstrate tolerance towards others’ needs or lifestyles, even the best barrier-free architecture is useless.