About this Translation

Joseph Stübben initially published City Building (Der Städtebau) in German in 1890 as part of a handbook on architecture (Handbuch der Architektur). This Handbook was published in Germany by Durm et al. (1890) between 1883-1933. Stübben subsequently published completely revised versions of Der Städtebau in the 1907 and 1924 editions of the handbook. The 1890 edition is still published in Germany as a reprint. In 1911 Adalbert Albrecht translated the 1907 edition of Der Städtebau into English. This translation is available in the MIT rare books collection, and as a typescript at the Frances Loeb Library at Harvard University. It contains all chapters except for Part V. However, a translation of a summary of this part exists elsewhere. It should be noted that this translation is not exact (e.g. some sentences are not translated literally but rather in terms of their general meaning). Further, the translator was not a native English speaker and the original as well as translated texts are over a hundred years old. For these reasons, the text is written in old-fashioned “German English” and thus often not easy to read. In this book we publish Albrecht’s translation basically unrevised, as a historical document, with all of its flaws. The typescript did not contain any figures. Since the value of the book depends heavily on the large number of figures referenced in the text, we added these to the translation (except for the majority of fold-outs). The German reference edition for both text and figures is available as a free e-book. This edition can also be used to access the missing content in Albrecht’s translation, such as the fold-outs and bibliography.

4 Typescript translation by A. Albrecht of the 1907 edition, Cambridge, MA, 1911 (497 pages).
6 Available at https://archive.org/details/derstdtebau00stgoog.
Acknowledgments

This translation of the typescript (497 pages) was published courtesy of the Rotch Library at MIT. We thank the MIT library staff, in particular Jennifer Friedman and Jenn Morris, for their assistance. MIT Libraries Document Service was helpful in making the translated copy available to us in image form in 2008. A group of staff and students at Arizona State University then helped transcribe the 497 pages of image files into text format since OCR techniques could not be used. We are especially grateful to Sue Mahalov in this context and also appreciate the contributions of Tyler Eltringham, Geoff Prall, and Tracy Geiger. Amanda Bosse and Dan Bartman were instrumental in formatting the text in InDesign. Thanks also to Aaron Kimberlin for technical support. We thank Peter Swift for his initial encouragement and advice on the historical importance of Stübben’s work. Finally, librarians at the Ludwig Maximilian University in Munich, and Dr.-Ing. Renate Fritz-Haendeler helped with reference searches and the libraries made the original hardcopy versions of the books available. Thank you to all!
Foreword

Josef Stübben (1845-1936) was one of the most important and widely known city planners of the late 19th and early 20th centuries. Although he was a prolific writer, and he wrote some articles in English, his major work, “Der Städtebau” ("Town building"), an encyclopedic text on the principles and practice of city planning, was never translated into English. The unfortunate consequence is that this highly significant planning textbook has never been made widely available to an English speaking audience. Now, as the lost art of city building is experiencing a rebirth in the U.S., Stübben’s great work is regaining attention.

The first edition of this book was published in 1890. It was the equivalent of an encyclopedia of city planning, Reinhard Baumeister has published in 1876 the first book on City Building. In 1890 Hermann Josef Stuebben published his part of the Handbook on Town Building in a very detailed way. The second edition followed in 1907 and the third in 1924. The 1890 edition was reprinted in Germany, in 1980 and is still considered to be a useful text on city planning, not just a historical document. The final edition of “Der Städtebau” included 900 illustrations, presented in thirty chapters and twenty-three appendices.

Stübben was a Berlin-trained architect who also had a doctorate in civil engineering. He was appointed head of the office of city planning, first in Aachen from 1876 to 1881 and then at Cologne, Posen and Berlin where he worked as Geheimer Baurat (architect to the political institutions and Beigeordneter(member of the community Council). During his career he was involved in city planning studies of more than thirty cities in Germany and abroad. The book “Der Städtebau” uses materials and draws from the experiences of his long career as a city planner.

Stübben was one of Europe’s best known planners, ranking alongside Camillo Sitte and Raymond Unwin as the leading European planning practitioners with direct influence on the development of American city planning. The major works of Sitte and Unwin are in English and are still being published. Unwin’s 1909 Town Planning in Practice was recently reissued by Princeton Architectural Press. Camillo Sitte’s major work, The Art of Building Cities (1889), was translated into English in 1945 and is now widely known to American planners and architects. The lack of an English translation of Stübben’s major city planning text from the same period is an obvious, missing link.

Stübben had a high profile and presented papers at numerous city planning conferences. One of the most important was his address at the 1910 conference on city planning sponsored by the Royal Institute of British Architects in which Daniel Burnham, Ebenezer Howard, Patrick Geddes and Raymond Unwin were
also featured. Also in that year, the U.S. Senate published an official document on the new American profession of city planning that contained examples of German planning legislation under the direct influence of Stübben.

Most historians agree that the basis of American city planning, which was professionalized in 1909, is largely drawn from two sources: England and Germany. Historian Brian Ladd, in his 1990 book Urban Planning and Civic Order in Germany, 1860–1914, wrote: “The academic discipline and administrative practice of city planning as we know it today, however, was born in Germany during the decades before World War I” (p. 1). It is also recognized that the roots of German planning have not been as widely studied as the English roots. That Stübben was never translated is probably due to the fact that the U.S. fought two major wars with Germany during the 20th century. One scholar noted that the volume of German material being cited and translated in architectural journals went from “a generous proportion in 1900 to a mere trickle in 1911”.

Yet before World War I, German city planning was much admired in America, during the time when American city planning was in its formative years. Many American planners, among them Daniel Burnham, Frederick Law Olmsted, Jr., and John Nolen made regular trips to Germany during this time to study how the Germans, generally regarded as exemplary city planners, were addressing their planning problems. Daniel Burnham took a grand tour of Germany in 1901 and wrote that he believed the Germans were far ahead of the Americans in their planning expertise. The German approach was heralded because, the American planners believed, the Germans were able to achieve the fundamental goal of planning at the time: the merger of the goals of beauty and efficiency (what was practical was beautiful and vice versa).

**Current Relevance of Stübben**

The translation of Stübben’s book is relevant on two fronts: as an important historical document and as a still-relevant manual of town planning practice. As a historical work, the book will provide important insights into early city planning practice in the U.S., because of Stübben’s influence here. But perhaps more importantly, “Der Städtebau” is still useful and relevant today, as planners seek to revive the lost traditions of town planning that were at the forefront of planning in the early 20th century.

Stübben’s work will be of particular relevance to the many people involved in what is known as New Urbanism, an urban planning and design movement with about 2,000 paying members working to reform the way cities are built in the U.S. This movement extends beyond the New Urbanist organization itself and is now
embedded in much of the current thinking about city planning practice.

The basic agenda is to reform all aspects of real estate development, including new development, urban retrofits, and suburban infill. In all cases, New Urbanist neighborhoods are designed to be pedestrian oriented and contain a diverse range of housing types and land uses. There is support for regional planning for open space, appropriate architecture, a more prominent and well-designed public realm, historic restoration, safe streets and green building, among other principles.

Importantly, the New Urbanists have worked to revive the art of city building by looking to past practitioners. Planners working in the first decades of the 20th century are particularly relevant precisely because of the specificity of their planning proposals. They were deeply involved in formulating the design of urban places, from streets to plazas and squares, to complete neighborhoods, parks, and all other fundamentals about how cities can be beautifully designed. To the New Urbanists and many others working to revive these lost traditions, this was city and town planning at its finest.

Obviously, the principles of city planning that Stübben detailed in his encyclopedic work will not be directly transferable in all cases. But they are a critical resource for understanding the logic of planning cities in a way that merges practical, technical and artistic notions of human settlement. How these elements of the urban environment are put together is something city planners, and especially the New Urbanists, are dedicated to understanding, reviving and implementing.

Stübben's "Der Städtebau" will be a much needed addition to the lexicon of the art of city building.

Emily Talen
Julia Koschinsky
PART VI

CITY PLANTED AREAS
PART VI

CHAPTER 1

Planted Streets

The most widespread manner of planting streets consists of rows of trees (also sometimes groups of trees and single trees); rarer are lawns and groups of ornamental shrubbery. When these are used they are nearly always combined with rows of trees. A third way of planting the streets, which may or may not be combined with rows of trees, is to lay out front garden plots between the street flush-line and the building flush-line.

a) Rows of Trees.

There may be single, double or several rows of trees that correspond to the direction of the street, hence run straight or curved, the trees being planted at regular distances from one another. It is true that rows of trees alone do not present an artistic effect especially if the trees do not thrive, if those that die are not replanted and altogether if the greatest care is not exercised in planting and keeping them; neither can it be denied that even the most beautiful rows of trees may interfere with the traffic and hide fine buildings. On the other side rows of trees are, in many cases, the best means of beautifying city streets and bringing life into them; their shade is an advantage, they mitigate the dust and bring a touch of nature into the mass of stone and masonry. City building should therefore aim not to do away with rows of trees but to see that they are planted in suitable places and properly cared for. On wide parts of street groups of trees or single trees are an advisable means of beautifying and enlivening the view.

In streets of less than 20m in width and closely built up on both sides two rows of trees cannot thrive; the distance of the trunk width from the houses must be at least 5m if the tree is to bear healthy foliage. If the street width is between 16 and 21m unless there are front garden plots, one row of trees will have to suffice; this of course involves an unsymmetrical street profile (compare marginal heading 146) Not until reach a street width of 22m is it safe to plant two rows of trees and three rows require a street width of 30m the number of the rows can be increased up to six and more; in this way and by the different distribution of the rows in the streets the various profiles are produced of which a number were given as examples in part II, headings 145 to 165. Trees are much benefited by front garden plots at the side of the streets and gaps between the houses (detached construction). In streets with front garden plots where the traffic area is 15m wide two rows of trees may be planted.

In front of monumental buildings the rows of trees, which interfere
with the view, are usually omitted, sometimes, if desirable the whole arrangement of the street is interrupted, either by laying out an area equipped only with isles of safety, candelabra, flagstaffs and such like (Place de l’Opéra in Paris), or by using lawns with flower beds and low shrubbery instead of the rows of trees (fig. 862). Thus it is quite proper that the rows of trees “Unter den Linden” in Berlin should cease at the point where the more important buildings begin, and on the Ringstrasse in Vienna the rows of trees are interrupted in front of the opera and other monumental buildings. Other examples are seen in the Appellhofplatz in Cologne (fig. 283) the Boulevard de Strasbourg in Le Havre etc.

The distance of the street trees from one another is from 5 to 10m, usually 7.5m. Certain small kinds of trees like locusts and hawthorn, require a distance of only from 5 to 6m, while spreading varieties, like the plane-tree, need at least 10m. The planting of spreading trees at a distance of only 5m from one another is often advocated on the ground that young trees with undeveloped tops reach a certain fullness and provide shade more quickly and moreover that it is easier to make space for the development of the branches by removing every second tree as soon as their growth requires it. If, notwithstanding, it is usual in laying out avenues to plant the trees from 7 to 8m apart at the outset, it is because it they are 5m apart the gratings surrounding them are apt to interfere with traffic and later when every second tree has been removed the distance of 10m between the trees is apt to make the street look empty, for a time at least, if not for always; luxurious and regular development of the trees in city streets is seldom to be expected until they have grown very old.

The distance of the rows from one another is generally about the same as that between the trees in the row. For walks and riding paths the customary width is from 6 to 8m (compare figs. 139 to 264). It is very practical where there are three or more rows of trees to plant them en quinconce, that is, so that each tree is on a line with the space between two trees in the next row; this adds variety and the foliage has more space in which to develop (fig. 863 & 864). If this is done the distance between the rows may, under certain conditions, be reduced to 5m,
as the distance must be measured diagonally; walks and riding paths of less than 6m in width are however undesirable.

If the way is to be used a a carriage drive the points discussed under headings 144 and 315 must be taken into consideration and these as a rule require wider, sometimes two or three times as wide, distances between the rows as those just mentioned. Wider distances are also necessary if grass and flowers are to be planted between the row; in this case the minimum space between the rows may be regarded as 10m.

The question what varieties of trees should be chosen for street planting is more often settled according to individual preference than serviceableness. Every variety of tree that is tough and hardy enough to stand wind and frost in an unprotected position, drought and heat, the dust of the street and the constant passage of traffic and whose roots have a certain power of resistance, is suitable, if properly planted and cared for, to be used a a street tree. Although according to this the choice is not very great, yet, when the street is long variety in the trees is just as necessary as variety in the street profile and the architecture, if the whole effect of the street is not to be monotonous and uniform.

The best hardiest street tree is usually conceded to be the common, small leaved elm (Ulmus campestris or Ulmus effusa), which in Belgium is called Reine des avenues and that has also succeeded well in many German streets in spite of poor subsoil. Still more beautiful is the maountain elm (Ulmus scabra), but it likes a somewhat better soil. Another excellent variety, though not quite as hardy, are the lime-trees (Tilia grandifolia, Tilia parvifolia and Tilia americana alba, silver linden). Then there are the plane-trees (Platanus occidentalis), which form stately, shady avenues but are not always proof against frost and therefore not adapted to planting where they will be exposed to north and east winds; the horsechestnuts (Aesculus hippocastanum) both the white blossomed and the red blossomed sorts, especially those that do not bear fruit and hence do not serve as targets for the stones of the boys in the street; the maples (Acer platanoides, Acer pseudoplatanus, Acer dasycarpum, Acer Schwedleri), further the tree of heaven (Ailanthus glandulosa), the white and the red hawthorn (Crataegus oxyacantha fl. albo pleno and fl. rubr. pl.), the oak (Quercus robur and Quercus pedunculata), the
walnut (Juglans nigra) etc. Less available are the acacias (Robinia pseudacacia), unless it be the globular species and they be used for some special purpose (as a setting for a fountain, a bench, etc.)

Of course the climate is of great importance in the choice of varieties; eucalyptus, olive trees, cedars and even poplars (Populus italica) are not suitable for German cities.

One disadvantage of the elms is that they are frequently attacked by beetles; acacias do not give much shade. The chestnuts get their leaves early in the spring but lose them in the autumn before the other sorts of trees. The foliage of lime-trees, elms and especially plane-trees does not come till late; the elms also lose their leaves early, while the two latter remain green somewhat longer. Plane-trees and maples keep their leaves longest of all.

Pleasant variety may be introduced into long streets by planting not only different sorts of trees but choosing those that vary in the time they leaf and bloom. This should only be done in long stretches of street however and different kinds of trees should not be planted in the same row; the experiment has often been tried but seldom with satisfactory results.

Long rows of elms, for instance, were interrupted at the street crossings and at their starting and terminal points with chestnuts, chestnuts with red American oaks, the tree of heaven with the hawthorn; it was found necessary however to do away with the inequality in their appearance by taking out the second sort as soon as the difference in growth became unpleasantly noticeable. In Hamburg mountain-ash was successfully alternated with oaks; the former were removed as soon as the oaks, which were very spreading, were sufficiently grown. Still, in general it is an undertaking of doubtful outcome to alternate trees of different foliage either singly or in pairs, for instance, two dark elms and a light maple; such an arrangement usually looks well only until the stronger of the two sorts begins to crowd out the weaker.

It is of the utmost importance that the young trees that are set out should be perfectly healthy and of sufficient size. Weak saplings and those that are very thin, even if they do not die under the disadvantageous conditions incidental to street traffic and city soil, develop unequally and are not able to produce the pleasant effect of a closed avenue. The least admissible diameter of a sapling to be planted, measured 1m above the ground, is 12cm; it is better to have the 15, best of all 18 to 20cm thick. Price must not be considered for, in view of the much greater cost of planting and cultivating the trees, it cannot be determinative whether a sapling costs 1.50 or 5 marks. It is best to keep a supply of 20 to 25 year old trees ready in a nursery.

The method of planting is also of importance. It will seldom happen that the soil of the street is such that trees can be planted without any preparation. It is usually necessary to dig a pit from 2 to 2.5m across and 1m deep and to fill it up again with rich earth. A mixture of dark garden soil and clay loam is good.
If possible the soil should be allowed to remain for the winter before planting is begun so that it may become better mixed and that the settling of the loose soil does not later interfere with the growth of the roots of the tree. If the soil is very poor, particularly if it is sandy or wet and clinging this process is not sufficient; measures must be taken to insure the roots of the tree sufficient nourishment and the soil must be properly drained. For the first purpose a large pit may be dug, about 3m across; but it is better to make not a single pit but a long ditch of about 2 to 2.5m in breadth and 1.5m in depth and after it has been filled in with good soil and allowed to settle to plant the row of trees in it. Drainage is accomplished by making a slit in the bottom of the ditch and filling it with loose stones; care must be taken to prevent the waters rising at the deepest points in the ditch (by connection with a street drain or in some other way). Where the bed of the street does not let water through the bottom and sides of the ditch must be covered with stones at the time that the good soil is filled in ad connection made with a drain.

The most dangerous, unfortunately also the commonest enemy of street trees is illuminating gas for from 10 to 20% of the gas produced leaks out of the pipes underground and if it reaches the roots of the trees it kills them. The protective measures that are sometimes taken against illuminating gas consist in putting a cover of asphalt round the gas pipes, in putting the pipes themselves in the drainage channels (Paris) or of putting an impenetrable wall of concrete, masonry or something similar between the gas pipes and the roots of the trees (fig. 865). The success of the first and the last named precautions is always doubtful as the gas filters through tiny crevices in the covering of the pipes or the masonry and impregnates the whole soil. It is therefore supplemented by covering the pipe thickly with dry gravel (fig. 865) and a suitable strip of the street surface is left so that it can be permeated by the gas fumes instead of their being especially attracted to the loose surroundings of the tree.
A row of trees or group of plants in the neighborhood of whose roots gas pipes lie must always be regarded as in danger; the small pipes leading to the street lamps may be just as destructive as the main pipes. For this reason the method employed in Paris of laying the pipes in the drainage channels, even if the connections with the houses are also laid in walled channels, does not entirely prevent the danger. In any case on all planted city streets and promenades the first care must be to see that all gas pipes are at least 3, better 5 meters removed from the planted spots. But it is best of all to replace the gas lights with electricity.

It is also necessary to leave a suitable space (at least about 2m) between the trunks of the trees and the openings of all kinds into the sewers, the hydrants and other similar objects in or on the street, because all these things may affect the growth of the tree. A space about 4m (at least 3m) high below the crown of the trees must be kept free for traffic.

Trees must not be planted on the roadway of city streets because there they are always in danger of being thrown down by teams or of gradually withering and dying and they are always injured by having their bark scraped and knocked by passing wheels. The arrangement of trees in figs. 167, 168, and 866, although still much used, is therefore wrong. Placing stones either in an upright or lying position about the trees to protect them (fig. 867) is not sufficient if there is much traffic; moreover such an arrangement is ugly, inconvenient for the traffic; and makes places for the street dirt to collect.

Hence the trees must be planted
on special strips of the street surface reserved from traffic or on the edges of walks and riding paths. A gutter between the last-mentioned ways and the roadway is not sufficient protection for the trees for vehicles often drive over it; raised curbstones are necessary, behind which the trees must be so placed that they are not touched by the hubs of wheels or the loads on teams. As the development of the roots is hindered if the stones are as near as from 20 to 30cm, the least admissible distance of the tree from the edge of the curb is 75cm, better 1.00m (fig. 868); in Paris it varies from 1.25 to 1.50m. If in exceptional cases it should be necessary to put the trees nearer to the edge a gap of from 1 to 1.50m in length may be left in the curbing. (fig. 869).

It is necessary that the soil above the roots of the trees should be kept loose so that air and moisture can penetrate to them. It is therefore practical to lay out a strip of the street without a hard covering and measuring form 1.50 to 2.50m across between the roadway and the footway (fig. 870); in order to take into account even the thinnest of ladies shoes small crossings of stone, asphalt or something similar may be made in the spaces between the trees, connecting the footway with the roadway (fig. 871). Where the sidewalks are narrow a loose space around the trunk of every tree has to suffice (fig. 872). The surface of the earth round the truck should in every case be slightly sunk and so shaped that the water does not trickle down between the trunk and the earth but permeates the soil a little distance from the trunk so that it reaches the roots better (fig. 873).

The uncovered space around the tree should measure at least 3, better from 4 to 5qm; it must always be kept loose and clean. If the pavement of the sidewalk is closer to the tree we can often notice how the roots raise the pavement or the asphalt to free themselves from its burden. If, on account of traffic it is unavoidable to pave the farther surroundings of the trunk in some way, a covering should
be used through which air and water can penetrate; in Berlin,
Breslau, Leipzig, Dresden, Darmstadt and other cities mosaic pavement laid in sand has been very successfully used for this purpose (compare heading 565). The arrangement of the footway in the Neckarstrasse in Darmstadt is shown in fig. 874, that of the Bellevue-Strasse in Berlin in fig. 875. The unusual position of the row of trees in the middle of the sidewalk in the latter case is owing to the subsequent re-construction of the street.

If there is so much traffic that it is impossible to keep the soil loose about the trunks of the trees, there is no alternative but to make a slight depression about each trunk, to enclose it with stones or a little wall and to cover it with a cast iron grating that can be walked on. The gratings may be circular, of from 0.80 to 1.20m in diameter (fig. 876) but it is better to make them oval or rectangular; they weigh from 150 to 300kg. Practical forms that connect closely with the curbstones are shown in figs. 877 and 878. The space under the grating must frequently be cleaned and regularly watered in dry weather.

If the soil is very dry it is advisable to lay a water pipe in the ditch in which the trees are planted through which water trickles either periodically or constantly. Drain pipes are also put in the surrounding of the trunk, closed with little caps and periodically filled with water; in this way the roots are better nourished than by merely watering the surface. Sometimes it suffices to make rain gutters without solid bottoms in the row of trees.\(^1\) In addition to watering it is necessary to stir up the soil. Finally during a long drought the branches and leaves, that are covered with dust, should be sprinkled so that the tree may thrive.

The young tree must be tied to a strong stake, better two or three connected ones of from 6 to 8cm thick and 4m high, driven about 1m into the earth, until it is strong enough to stand strong winds. In addition the trunk must be protected by a strong but airy covering. These coverings are often made of willow wickerwork, sometimes of galvanized iron wire, or consist of four perforated boards (fig. 879). Another, simpler but ugly method is to nail galvanized wire netting to the three posts or stakes that served for the original support. The best looking upright gratings are those made of iron rods which are screwed into wooden blocks at the bottom (fig. 880 & 881); these weigh approximately from 12 to 18kg and cost from 7 to 8 marks.

The trees are benefitted if, in addition to depressing the ground about them as shown in fig. 873, a grass plot is made which holds the moisture longer and keeps the soil loose. In this way little “isles” of grass are made around every tree, as on the Vienna Ringstrasse (fig. 882) or strips of grass underneath the whole row, as in Breslau, Basel, Zürich, Strassburg and on different parts of the Ringstrasse in Cologne (figs. 883 & 884; compare also figs. 190, 246 & 247). If the little isles of grass are enclosed at all it is only with flat iron wire; the stripe of lawn, as they prevent passing across altogether, may be more strongly enclosed, for instance, with iron rods, or cast iron arches (figs. 885 to 888). The single cast iron arches are bound together with wire. Instead of cast iron arches other ornamental cast iron patterns or wrought iron arched forms of strong wire are sometimes used.

\(^1\) see also: Hampel, K. Stadtbäume. Berlin 1893.p. 45ff
Inside this enclosure the grass is sometimes bordered with ivy or some other creeping plant.

A row of trees on a strip of grass can be rendered very attractive by planting, between every two trees, a climbing plant (gravevine, clematis etc.) which is trained along wires in the form of garlands or festoons from tree to tree. In this way the whole walk is pleasantly bordered with green on either side (fig.889).

Another way of beautifying an avenue that was formerly very popular and is still sometimes employed is to clip or prune the tree-tops. The free
Fig. 876
Four-part tree grate in Paris

Fig. 877
Four-part tree grate in Hamburg

Fig. 878
Four-part tree grate in Leipzig

Fig. 879
Tree protection made out of four wooden boards

Fig. 880
Tree protection from Hamburg

Fig. 881
Iron protection (made out of iron)
development of foliage did not accord with the stiff formal garden style of the seventeenth century and with Lenôtre’s taste. Three styles of clipping are shown in figs. 890 to 893, two hedges in the park in Brussels, the rectangular trees on the Place de la Carrière in Nancy and an Allee in the park St. Germain en Laye in which only the lower part of the treetops is clipped. Lately these artificial tree forms particularly those in geometrically regular shapes, seem to be becoming popular again. This method may also be employed for practical reasons, especially if it is desirable to keep the view of the upper part of the houses free, as may often be observed in health resorts and in many towns on the Rhine.

b) Garden Areas

Lawns with flower beds and groups of ornamental shrubbery combined with rows of trees are the best decoration of wide city streets. They are pleasant to look at and offer the passer-by an opportunity to rest both mind and nerves; grass and shrubbery are necessary to make an allee into a promenade. Examples of such promenade streets in Dortmund, Aachen, Mainz, Mannheim, Munich, Hague, Breda, Lille and Zürich were given in figs. 149, 151, 156, 157, 168, 176, 180, 248, and 249. Such garden areas are laid out either in geometrical patterns or on so-called “natural” lines. The latter are possible only if the space is wide; hence geometrical figures predominate.

These require a level surface which, on account of the improvement in
appearance, should be slightly (20 to 40cm) sunk below the surrounding street level (figs. 894 to 900). Sometimes slight rises and depressions are made in the lawn itself, as on the Kaiser Wilhelm Strasse in Breslau (fig. 901). Such area involve great care on the part of the gardener and also a certain self restraint, for too much artificiality easily lends to taudriness. The middle plane is the most suitable place for flower beds, groups of plants, marble or bronze figures, vases, fountains and such like, in the arrangement of which it is well to keep the centre free on long stretches because of the better effect obtained. The ascending edge is the place for strips of ivy, moss, architectural patterns in creeping plants and flowers, and similar borders. The upper edge can be planted with real street trees or dwarf varieties, also high growing roses and may be decorated by garlands. The whole requires a firm but not too high architectural fence or ege to enclose it. In this way the ideas of the parterres of the French gardens are adapted to the city streets.

The free, natural lines of the landscape garden in the street require a more undulating surface. It cannot be expected that the beauties of an English park can be produced because of the close and stiff surroundings but the principles of valley and hill formations are easy to follow. Beautiful grassy hollows, planted rises in the ground and lawns the lines of which are eay and natural can be obtained if the space is at all extensive. Unfortunately however we often find high grass banks instead of gentle slopes, thick groups of shrubbery instead of open vistas.
and a hardness in the treatment of the lines that is an offense to artistic feeling.

Whereas the fig. 899 and the Kaiser Wilhelm Ring in Cologne, show geometrical areas, the Sachsen-Ring and the Deutsche Ring in the same city are ornamented by free “English” gardens, bordered by trested walks; the Ubiering, on the contrary, shows informal garden areas on both sides of an avenue. It is planted in the way explained by figs. 899 and 900.

Basel possesses a charming street along the course of the old fortifications, with straight lined and informal planting. The accompanying plate illustrates the
main stretch between the Spalenter and St. Alban-Tor.

The west part of the Schützengraben (33.60m wide) has a broad and a narrow roadway which embrace an enclosed garden area 11.70m wide; the entrances to the latter are open so that walks, benches and playgrounds are freely accessible; the southern footway planted with trees; the adjoining properties have front garden plots 9m deep. The east part of Schützengraben, not including the 15m deep front garden plots along one side, is 27m wide and consists of only one roadway with two footways planted with trees; every two or three trees stand in a strip of lawn. The west part of the Steinengraben is treated in the same way but is not so wide and has no front garden plots. On the side towards the city the east part of the Steinengraben leads to a park on the side of former ramparts, on the other side it leads round it. The wide roadway that encloses the one garden area ends at the highest point in the park from where a beautiful view of the city, particularly of St. Elisabeth’s Church is obtained. On the Steinentorberg a second bastion is still standing. The Elisabethen-Anlage is bordered on the side towards the city by a public park, on the other side by front garden plots 19m deep. The same arrangement is continued on the first stretch of the Aeschengraben; then
follow two roadways with a strip of parking between them, as on the west part of the Schützengraben but on a larger scale, as the street width at this point without front garden plots ranges between 38.50 and 41.80m. After passing a short connecting stretch the St. Alban-Anlage that leads to the St. Alban-Tor is treated in the same way.
The Kriegsstrasse in Karlsruhe is arranged like fig. 903; it would have been better to have reduced the second roadway about 1.50m for the benefit of the planted area. The garden areas are too densely planted with shrubbery and too much cut up.

The group of streets in Mainz, illustrated on the accompanying plate show four different ways of planting: two allées bordering a garden area on the Kaiserstrasse; three rows of trees on the middle plane of the southern Bonifatius-Strasse; front garden plots and sidewalks bordered with trees on the northern Bonifatius-Strasse; front garden plots alone on the Schulstrasse.

The magnificent old Poppelsdorfer Allee in Bonn (fig. 904) possesses a lawn 19m wide between the two double rows of trees; the arrangement of the ways would not be suitable for busy city traffic.

The section of the Wallstrasse (Ringstrasse) in Krefeld on the accompanying
plate shows three ways of planting; the effect is attractive but for busy traffic the roadways are too narrow.

Fig. 902 shows the 80cm wide garden areas in the rows of trees on the Promenade des Anglais in Nice; they consist not of strips of lawn but of thick hedges of southern ornamental plants; the method of affording views of the promenade and the sea from the hotels by building out the windows sideways, like the teeth of a saw, is unusual.

Finally the accompanying plate illustrates the parking on the Avenue du Bois de Boulogne in Paris, 110m wide not including the front garden plots. The main street is 36m side; the planted areas that lie beside it and rise slightly towards the houses are beautiful in effect. From most of the cross streets only foot paths lead through the garden area so that the connected character of the whole is preserved as far as possible.

The most effective means of enlivening streets with garden areas is by the use of water, running water in the shape of natural or artificial brooks (compare heading 287) and artificial springs, grottos and fountains from which water trickles or is thrown up. The latter are often used to adorn the streets even where there are no garden areas; but it is usual also in such cases to surround the basin of the fountain of whatever form it may be with a flower bed. It is important that the edge of the basin should not be higher than the street; is it better that it should be a little lower so that a good view of the surface of the water is obtained. Hence the bed surrounding the basin, to be planted with groups of plants and flowers in geometrical or architectural patterns, should slope slightly towards the basin (fig. 905).

The fences or railings used to separate the garden areas from the ways are important both
as regards their lines and the material of which they are made. The lines must accord with the shape of the street and the directions of the traffic. Hard lines are unavoidable if street engineers and landscape gardeners work independently of one another; cooperation is essential. If it is possible not to enclose the area at
all so much the better for the effect.

The simplest, but a poor kind of enclosure, is a wire stretched between wooden posts. It should be possible to tighten the wire when necessary otherwise it soon becomes loose and untidy looking (fig. 907). Sometimes two or three wires are stretched one above the other; but even if iron posts are used instead of wood such an arrangement is of no permanent value. An improvement is the use, instead of a wire, of a flat iron rail screwed onto the posts. A round iron rail, an iron bar, a hollow bar or a twisted bar offers greater resistance (figs. 906, 908, & 911). Also the railings illustrated in figs. 855 to 888 may be used in such cases. These simple enclosures should not be higher than from 30 to 50cm. They do not serve to keep dogs out or people who intentionally step in; but this is generally not necessary.

Other low fences are those in the form of a chain (fig. 910) or a massive edging of stone or cement. (fig. 896). Stone sockles surmounted by low cast or wrought iron railings in ornamental patterns are very frequent (fig. 912). A strong,
Fig. 903
Of the *Kriegs Street* in Karlsruhe

Von der Kriegsstraße zu Karlsruhe,
$\frac{1}{500}$ n. Gr.

Fig. 904
*Poppelsdorfer Allee* in Bonn

*Poppelsdorfer Allee* zu Bonn. — $\frac{1}{500}$ n. Gr.
(922 m lang.)
also low fence is shown in fig. 909. Higher fences that make it difficult to get in and also keep out dogs are also suitable for larger garden areas; they are fastened either on single stones at the bottom or to a continuous stone base and are stayed or propped at the back. They are often 1.30 and more meters high but a greater height than 80cm is not advisable, otherwise they interfere with the view of the plants and give the garden areas which are not extensive in any case, a caged appearance. Points and edges on which children or adults might injure themselves should be avoided. This subject of fencing is more extensively dealt with in part III, vol. 8, treatise 2 (under C) of this “Handbook”.

If parking in the streets is to present a good appearance it is essential that the fences and the edges of the lawns should be well kept. If the fences are low or if there are none flower beds may be protected from dogs by special light woven wire enclosures.

c) Front Garden Plots
Front gardens adorn both the street and the house and are also of high
sanitary value. They enlarge the free, unbuilt on space without increasing the dirt, dust and noise of the street; eyes and lungs are benefited by their vegetation and they also aid the growth of the rows of trees in the street. They separate the dwellings from dust and noise and from actual contact with the public traffic. If they are at all deep it is even pleasant to sit out in them, particularly on beautiful evenings when they are not as close as inside courts and small back gardens. They may be connected with the dwellings by terraces or balconies or be entirely separate. It is clear however that on the south side of narrow streets front garden plots that get little or no sun are not practicable. It also adds variety if some of the streets have plots on both, some only on one side.
The depth of the front garden plots, that is the space between the street flush-line and the building flush-line varies between 2 and 30m. The Prussian flush-line law unreasonably prescribes that, as a rule, the depth shall not exceed 3m although the above mentioned advantages can only be enjoyed if the front gardens are at least 5m deep. The common use of small dimensions and this provision in the law are the result of a secondary purpose of the front gardens, that is, to make it possible when traffic increases to widen the street, that is to extend it over the area occupied by the plots and to do away with the later. Leaving this out of the question the most pleasant depth for front gardens both for the street and for the houses, is between 6 and 15m; deeper ones are seldom found and are only possible if the building lots are very deep. The unusual depth of 30m and more, found in the Kaiser-Wilhelm-Strasse in Breslau, is owing in this particular case to the fact that on both sides of an old curved street the building flush-lines run straight and parallel whereas the street flush-lines follow the curve (fig. 913).

For front gardens which, in case traffic requires it, are to be absorbed into the street, the same rules must be observed, as regards projections and recesses in the fronts of the buildings, as those that apply on the open street. Porches, terraces etc. that extend in front of the building line must be regarded as temporary structures, if allowed at all. This is not so if the front gardens are to be permanent when we must distinguish between open (detached) and closed construction.

If closed construction is used the strict observance of the building flush-line is indeed necessary, unless some agreement be made among the neighbors, so that the unsightliness of bare side walls is avoided. If the neighbors are agreed it is however very desirable to have projections and recesses extending across the front of several houses, or of one house alone (fig. 914 & 915). It is to be regretted that such agreements among the neighbors are rare. As a rule therefore only projections from the building line can be made and they must be subject to certain limitations as regards length, height and depth so that the purpose of the plots is not frustrated and to prevent one neighbors interfering with another.

Frequent regulations regarding projections in front gardens are as follows:
1) Low structures in front of the house not more than 1m high, such as approaches, steps, terraces, light shafts etc. may extend up to the line of the street.
2) Higher front structures like portals, verandahs, bay windows, stairways etc. may occupy two fifths of the front of the building and project one third of the depth of the front garden.
3) The space between the building flush-line and the street flush-lines that is not used for structures must be laid out as a garden with paths and must always be kept in good order.
4) On the street flush-line and on the boundary of the adjoining property an iron or wooden fence on a stone base must be erected; the base must be from 20 to 50cm, the fence not more than 1.20 m high.
Front garden plots without a fence next to the street are common in English and American cities and should be introduced with us because of their quiet, pleasant effect.

If the houses are built detached it is very advisable to allow owners to
set them as far back from the building flush-lines – the distance of which from the street line must be definitely fixed – as they may desire. If groups of two or more adjoining houses are allowed, the owners of such a group must, as when closed construction is used, come to an agreement among themselves. Whether construction be open or closed projections in front of the building flush-line can be made only within certain limitations. Considerable freedom in the treatment of the building should however be allowed for in villa districts variety in the street view is desirable and expected.

The horticultural treatment of front gardens that are from 3 to 10m deep will as a rule have to be along strictly architectural lines; only if the depth is greater is informal treatment possible. In figs. 2 and 3 a few forms of planting were indicated. Similar arrangements are shown in figs. 916 to 918. The combinations that can be made with such geometrical forms are inexhaustible for in this case real gardening is of secondary importance. An example of landscape gardening is shown in fig. 919. The path leading to the door is generally flagged, paved with asphalt or mosaic (compare heading 565); the other paths which serve only to divide the beds are covered with gravel, sometimes colored gravel. The edges are generally bordered with evergreen plants (ilex, rhododendrons etc.) more rarely with ornamental shrubbery; the inner plots which are sometimes slightly sunk are generally planted with flowers that bloom in succession; sometimes expensive “carpet” beds are made. Climbing plants (ivy, clematis, grapevines etc.) may be trained along the fence next the street and the neighboring boundary, also up the front of the house where they make pretty coverings for balconies, terraces etc. Vases, figures, grottos, fountains, arbors etc. may also be used; high growing trees, on the contrary, only in exceptional cases, unless, as is often the case, the plot is to be used for a restaurant garden. In all cases it is essential that the garden should be most carefully kept.

Fig. 920 shows the treatment of a front garden that rises towards the house (on a hillside. The ascending steps on the left correspond to the easier slope on the right while at the door of the house the steps are terrace-like in form so that three characters are combined in the small space lending charm and variety to the effect.

The landscape treatment of front gardens of greater depth must also be kept within very modes bounds. More informal treatment is possible only on wider properties where the front garden connects with the real garden or park. Figs. 921 and 922 give examples of this although the subject really lies outside the province of city building.

The fence in front of the garden plot and on the neighboring boundary must be open if the plot is to benefit the street as well as the house. Hence both massive and perforated walls are admissible only along short stretches. Wooden fences may be attractive but are not durable and must be very carefully kept; it would be unjust however to prohibit them. Hedges are beautiful but only
possible under rural conditions. Iron railings are most widely used. They should have a stone or cement base as it makes them firmer, looks cleaner and provides proper connection with the sidewalk; pointed bars should be avoided because of their disquieting effect.

High sockle and high railings detract from the effect of the plot. Hence it is advisable to limit the height of the sockle or base to from 20 to 40 cm, the height of the railing so from 1 to 1.3 m, measured from the sidewalk. Railings in the form of spears, harpoons etc. should be excluded as they are dangerous and cannot really keep people out if they are determined to get in. A large number of suitable fences are illustrated in part II, vol. 2, treatise 2 of this “Handbook”.
If the fences are longer than approximately 10m the pattern should be interrupted and this is also customary at the gates. In individual cases a certain pattern has been prescribed for use along a whole street but in general variety is to be preferred.

If, where the houses are built in closed rows, the fences next the street are omitted altogether, following the example set by American and English cities, the effect is most pleasing especially if the plots are as deep as from 8 to 12m and they are on narrow residential streets. The effect is much enhanced if the whole series of front garden plots are treated and planted as a whole, instead of each plot being separately laid out.

Sometimes it is inconvenient or inartistic to continue the plots right up
Fig. 921

Vor- und Hausgarten\(^{117}\). — ca. \(\frac{1}{2}\) von \(\frac{1}{2}\) n. Gr.

a. Wohnhaus.
b. Stallgebäude.
c. Glashalle.
d. Cabinet.
e. Pavillon.
f. Becken mit Springbrunnen.
g. Vorgarten.

a. Ablauf des Springbrunnen.
b. Turn- und Spielplatz.
c. Nachgarten etc.
d. Teich.
e. Laube.
f. Boch.
g. Figur.

Front and main yard (a. residence, b. stable, c. glass hall, d. gallery, e. pavilion, f. fountain, g. front yard, h. fountain drain, i. sports and playground, k. fruit garden, l. pond, m. pergola, n. creek, p. sculpture)

Fig. 922

Front and main yard
to the end of the street. In such cases they may be terminated on one or both sides (figs. 923 & 924), care being taken that the last plot does not lie next a bare boundary wall but comes next to a projecting part of a building.

Whereas the front gardens with which we have been concerned up to now were parts of private property it sometimes occurs that they are laid out as parts of the public street. Fig. 925 gives an example of this where the houses are built in closed rows; it is rarely found with us but is frequent in America; the plots are interrupted only at the entrances to the houses, are enclosed by low edgings or not at all and are kept up by the city. Sometimes there are public as well as private front garden plots on the same street as is seen in fig. 926 showing the vegetation on the Königswall in Dortmund which runs in front of villa properties.
a) General Remarks

Practically all public city squares are more or less suitable for planting; vegetation in some form is the most widespread and in most cases the best means of adorning them. On the traffic centres (compare part II, chapter 8 under a) rows of trees can generally be planted on the edges of the sidewalks and of the isles of safety; sometimes there is an area in the centre out of the way of traffic that can be ornamented with garden beds, fountains etc. The useful areas (market-places etc.) can usually be surrounded with trees or have trees planted on some part of them. The really ornamental squares are absolutely dependent on garden areas and walks with trees. On architectural squares trees are less in place as they interfere with the view of the buildings, but squares in front of monumental buildings (squares of approach) may be planted with beds and even high groups of trees are not undesirable. The movements of the traffic must of course be considered and not interfered with.

Plantings in squares that interfere with the traffic are just as inexcusable as
those that are too much cut up by the lines of traffic, especially roadways, (compare Pelikanplatz in Zürich and Georgs-Platz in Hannover (fig. 404)). Concealing the view of buildings and blocking lines of traffic are two dangerous points that
must be avoided in planting city squares. It may be necessary, in certain cases, to dispense with vegetation as a means of decoration, altogether.

It would be wrong to confine the use of horticultural decoration to large and important squares; on the contrary every space that can be planted without detracting from the architectural effect of streets and squares and interfering with the traffic, should be used for this purpose; it beautifies the city and benefits all classes of the population. In cities that are laid out on a rectangular scheme we are often confronted with the question whether a whole block shall be “sacrificed” for an ornamental area; one of the advantages of the “natural” plan of construction of cities; in which the streets are adapted to the directions of traffic, the form of the land and property boundaries, that small open space of different shapes are often formed, lying between the directions of traffic, which can be used for nothing else.

As far as possible all such ornamental areas should be regular in shape. But as the form is largely dependent on the streets that lead into the square or surround it, the directions, width and division of the streets must be determined in connection with the size and shape of the ornamental square. This should be done in the plan of construction. It would be a mistake to determine the boundaries of the streets and squares in the plan of construction and to leave the arrangement of the garden areas entirely to the gardner. Indispensable as the work of the latter is in the final arrangement and in the technical execution, it is just as important that the arrangement of the planted areas, ornamental squares and public gardens as a whole should be provided for in the city building plan according to their size, shape and distribution.

b) Rows of trees

As in the streets so too in the squares the simplest manner of planting consists in rows of trees. We must distinguish between rows of trees round the edges of the squares and those that form a sort of grove in the centre. The former method of planting is more common sometimes the rows are single, more often double or triple, so that shady walks are formed; in some places there are six, eight, even ten rows. The second method, planting in groves, is rarer. Examples are parts of the Stuttgart Schlossplatz and the Peters-Platz in Basel; in both cases the regular rows of trees are combined with lawns, benches, etc. As regards the kind of trees, method of planting, protection against illuminating gas and injuries, cultivation and irrigation the same rules apply as those given in chapter 1 of this part (under a). The distance between the trees and the rows should be somewhat greater than in the streets so that the square may remain airy. Grass round the single trunks and strips of lawn under the rows are also sometimes found. Clipping the tops of the trees was particularly popular on French squares during the Baroque period and may still sometimes be justified.

Greater care must be exercised in the choice of trees for squares than in
that of those for streets for on the equal development of the tops of the trees depends the whole appearance of the place. For this reason it is better not to attempt the use of different varieties on the same square, nor to try to obtain variety in the size, shape and form of the top.

The arrangement of the rows is always regular; not only in the long direction but also across and diagonally they should form regular figures, generally straight lines. This makes it difficult to plant groves or even edgings on irregularly shaped squares which however are especially adapted for ornamentation by free garden areas and groups of trees.

The surface of the square between the rows of trees is generally covered simply with gravel or with the kind of pavement described by us under heading 564. If on account of the usage, for instance, market traffic, it is necessary to put down a stone or other impenetrable pavement, the trees, even if there is a free space around each one, will generally suffer. Hence, in their interest the pavement, mosaic, cement or asphalt, should be confined to the portions of the square over which the greatest amount of traffic passes.

In order to protect the trees and keep out vehicles different kinds of barriers were formerly erected round the edges of the square. Sometimes rows of posts of stone, wood or cast iron were used, or railings of iron or wood, or wooden posts connected with chains; occasionally even walls or ditches were employed. Another method was to raise the whole surfaces of the square and support it with buttresses. The most that is done today however is, as a rule, to put a slightly raised curbstone round the edge which keeps out vehicles without interfering with foot passengers. Though we may rejoice that this simple method has taken the place of the former, often unsightly, one yet we must regret that it makes the more monumental development of the streets and squares impossible. Where the means and the locality permit should not hesitate today to make the “frame” of the square more corporeal by means of attractive chain barriers etc. combined with seats, candelabra, fountains, statuary and such like.

c) Garden Styles

Before we go farther in the discussion of the horticultural treatment of squares it is necessary to review briefly the different garden styles.

As the next half volume of this “Handbook” deals in detail with this subject the following remarks will suffice here. The principal historical garden styles are: the Arabian (Moorish), the Roman (Italian), the Dutch, the French, the Chinese and the English. The first four are called regular, formal, architectural or geometrical styles; their forms agree with those of the corresponding styles of architecture. In the same way we speak of Greek, Gothic, and especially of Renaissance and Baroque gardens. A contrast to these are the Chinese and the English garden styles which are designated as irregular, informal or natural and are usually called “landscape style” because their forms are in accordance with
Fig. 927
From the Tuscan des Pliniius (a. path, b. decorative element, c. fountain, d. plane tree hedge, e. rose plants, f. garden house, g. forest)

Aus dem Tuscan des Pliniius\textsuperscript{118}).
e. Rohpflanzung. f. Gartenhaus. g. Wald.

Fig. 928
Median of the Villa d’Este in Tivoli (a. court yard with columns, b. living room, c. upper terrace with view of Rome and Campagna, d. lower terrace with water art, e. large fountain with semi-circle stairs up, f. staircase with cascading water edging, g. water basin with cascading water feed on the side, h. bridge)

Mittelfläche der Villa d’Este zu Tivoli. — $\frac{1}{2}$ n. Gr.

Fig. 929
Parterre de broderie: The dark stripes are made of flowers; the leaf and tendril ornaments are made of manicured buxus
considerations of natural beauty as they seek to imitate and idealize nature and aim first of all at producing views that are effective as landscapes.

Fig. 927, taken from the Tuscum of Plinius, is an example of a Roman garden; fig. 928, part of the Villa d’Este in Tivoli, may be regarded as an example of the gardens of the Italian Renaissance period. Regular, architectural lines, colonnades, fountains, niches, figures, waterfalls, terraces and flights of steps characterize the gardens of this style. Especially do terraces and flights of steps pay an important part in Renaissance gardens. Architecture and gardening are bound up together; the latter does not appear independently but as an accompaniment of the former.

The Dutch and the French garden styles also belong to the Renaissance period that developed according to the character of the country. But in this case architecture was not so prominent and gardening became more independent. The straight lines and geometrical figures of the paths, rows of trees, lawns, cascades, terraces and flower beds are retained, in Holland treated very stiffly and quaintly; the influential French garden artist Le Nôtre applied them all to the clipped trees, hedges etc. Many French gardens are distinguished by excellent taste. This style which was also dominant in Germany in the eighteenth century and finally went astray in Baroque oddities, finally had to give way as a whole to English art in gardening but is still used occasionally in large ornamental squares and is especially adapted for use in small ones. Its finest points are the so-called “parterres” (level regular lawns and flower beds), “carpet beds”, borders, rose gardens, circular beds etc. Because of the importance of this kind of decoration for city squares examples of several older and more recent parterres and “carpet beds” are given in figs. 929 to 937. Fig. 938 shows a circular flower garden; figs. 939 to 942 are borders; fig. 943 shows the rose garden near the marble palace in Potsdam, a conventional arrangement of beds with a raised path around them. The carpet beds are often raised in the form of flat balls, coats of arms etc.

English gardening, which owes its development partly to the study of the old, labyrinth-like gardens of China, is more independent of architecture. It aims at imitating or artificially beautifying nature. Under the leadership of the Prince Pückler-Muskau it has also become the basis of modern German landscape gardening. It is often also united to works or architecture or sculpture; but in this case, in contrast to Italian gardens, architecture and statuary serve the garden art: pavillons, arbors, statues, fountains etc. serve to enliven the landscape. Only in the neighborhood of the main building (the castle, concert hall etc.) does the landscape give way to the flower garden (pleasure grounds) and more conventional lines. Parts of English parks in the so-called modern style are shown in figs. 945 and 946 and on the accompanying plate, while fig. 944 shows a flower garden in a pleasure ground. On the accompanying plate the main building is

---

1 this word parterre does not mean “ground floor” or on a level with the ground but is derived from the Latin “partiri” to divide
raised and affords a view of the whole park; the flower garden is separated by a hedge 2m high except in spots where the height is reduced from 50 to 60cm to afford a view; in addition it is much concealed from outside by other vegetation; the seats, surrounded by hedges, are in nooks that would be suitable places for vases and statuary.

**d) Ornamental Areas.**

After this comparison of the different garden styles it is clear that for the city areas that are not to be ornamented merely with rows of trees but are to receive more extensive horticultural treatment which however is dependent on the surrounding structures and streets, the regular forms of the Italian and French garden styles are especially adapted, of course without limiting modern serviceableness and individual creative work. But if the area is large and irregular in form the landscape style is just as suitable.

The gardens that serve to adorn public areas are either enclosed or open. The former have a strong fence round them and are entered only by the gardener. The open gardens on the contrary are traversed by footpaths. The difference lies mainly in the size of the area, not so much in the way it is planted and arranged.
Fig. 931
French Parterre composed of bux, lawn and flower components

Fig. 932
Renaissance-Parterre à l'anglaise (lawn with flower beds)

Fig. 933
French Parterre lined by flower beds with buxus edging
Fig. 934

French Parterre made of bux on gravel, surrounded and crossed by flower beds
Oval Parterre or carpet garden (the individual plants in the three round elements are decorative foliage plants. Taller and smaller roses alternate on the circular path. The groups are made of ornamental bushes).

Modern Parterres or flower gardens (a. Gravel oath, b. lawn, c. flowerbed, d. individual plants)

Modern Parterres or flower gardens (a. Gravel oath, b. lawn, c. flowerbed, d. individual plants, d. decorative foliage plants)
Fig. 938
Circular rose garden in English garden

Fig. 939
Randmuster (Borduren).

Figs. 939 - 941
Border patterns
The enclosed garden areas on squares resemble the geometrical garden areas on broad streets discussed under heading 640 and what was said of the latter applies also to the former. Two examples in Cologne are given in figs. 947 and 948.

There is more variety in the arrangement of the ornamental open areas because they consist of a larger or smaller number of plots formed by the ways that cross the square. To prevent the space being too much cut up the ways should be limited to what is necessary. Driveways should be excluded from an ornamental area altogether; but this requirement must be taken into account when the city plan of construction is made so that the garden is not disadvantageously placed or traffic directions blocked. Ornamental areas that are traversed by roadways lose much by having their surface cut up (compare heading 179 & 208, also figs. 325, 326 and 404). Examples of ornamental squares with footpaths only are shown

---

Fig. 942
Border pattern of a flower garden

Fig. 943
Rose garden of Marmor Palais in Potsdam (from the steepest embankment, lowered by 50cm)
Provision should be made for some shady walks and quiet seats, if possible with a view of fine buildings or of particularly attractive parts of the square, also for fountains, monuments, vases and, where the area is more extensive, for pillars, columns and similar architectural pieces.

Rows of trees may surround the area but only if it is large should they should cross it. Those varieties should be chosen that get their leaves early, have beautiful blossoms, do not bear any of the seeds or fruit that litter up the walks and that keep their leaves late into the autumn. The inner space should be ornamented with lawns, evergreen plants, shrubbery and regular flower beds, the position of which depends on the nature of the square and especially on the position of the fountains etc. Suitable evergreen plants are Ilex, evonymus, rhododendrons, cherry-laurels; ornamental shrubs are: spirea, weigelia, deutzia, barberry, lilac, elderberry, etc. Conifers have the disadvantage that the dust sticks to them; in any case only those sorts should be used that can stand the climate.

If the landscape garden style is used it is even more necessary to limit the number of ways as far as possible so as to obtain at least a few landscape scenes of some extent; the ground should be undulating so as not to give sharp contrasts to the regular forms of the buildings and streets and to the stiff lines of the enclosing fence. Especially in French garden areas the artificial depressions and rises in the ground are often unnaturally exaggerated.

e) Recreational areas.

We use this term for these spaces whose principal purpose is not to ornament the squares but rather to provide quiet, shady spots where people and children can rest or play. These recreation areas are not as common in Germany
as in France and England. In figs. 410 to 412 three simple German examples are given; fig. 954 is an example in the old city in Cologne; Hamburg has beautiful spaces of this kind. Figs. 855 to 960 are Parisian recreation areas.

The Cäcilien-Kloster in Cologne (fig. 954) shows a rectangular playground with seats inside a regular setting. The six Parisian squares: SteClotilde, Montholon, Popincourt, Innocents, St. Jacques and Ste. Geneviève are informally treated, liberally provided with chairs and benches where the ways widen also offer some space for children’s play. Ste. Clotilde and Popincourt are perhaps a little too stiff
Fig. 947

Landscaping of Friesen Plaza in Cologne (a. circular element with ornamental bushes, b. ivy bands with flowers inbetween, both elevated towards the median, c. foliage plants, d. tall roses, connected through clematis garland, e. restroom (not completed), surrounded by ornamental bushes, f. bench, g. linden tree, h. enclosure, i. gravel path)
and studied in effect but the squares Montholon, Innocents and St Jacques are magnificent, offering beautiful, quiet spots for rest in the middle of the bustle of the city. The Grotto pond in the square Montholon, the large fountain in the Square des Innocents and the old Jacob’s Tower in the Square St Jacques lend a special charm to the garden areas. The Square Ste. Geneviève in Belleville is surrounded by four rows of trees under which the children play while the planted
Fig. 949
Oval garden plaza

Fig. 950
Landscaping of a rectangular public plaza with regular pattern (1-6 seats, a. foliage plants and evergreen bushes, b. very low hedge, c. ornamental elements of periwinkle and ivy, d. median group)
space in the centre offers a pleasant opportunity to sit.

Similar to the Cäcilien-Kloster, but circular, is the Square de la Réunion in Paris,(fig. 962) consisting of a double ring with trees, a fountain in the centre and a thick hedge round the whole. But particularly worthy of imitation are the recreation areas on both sides of the fountain between the streets Mignard and Spontini(fig. 961); although these are really nothing more than wide planted streets inside the hedge-like enclosures place has been gained for two rows of comfortable seats.

Recreation areas for children (children’s playgrounds) should be properly
equipped (compare heading 212); there should also be a covered pavilion or hall in which they can take refuge when it rains, a drinking fountain and a lavatory if the area is large enough to accommodate them.

Recreation areas are quite differently enclosed from ornamental squares. The ways through the latter are always open, those in the latter only at special times. Consequently recreation areas are strongly fenced in and have gates; while it is being used however the whole area inside is under the constant supervision of the superintendent so that only very low divisions between the lawns and the ways are required. These may consist merely of a low iron rail or wire fastened to posts, low iron railings, arches of cast iron etc. (compare figs. 885 to 888 and 906 to 912). The outside fences of both closed and open ornamental squares may consist of the same; often however ornamental oak fences of graceful design (for instance, those by Schliessmann in Kastel-Mainz) or higher iron fences are used. If the outside fence is low the flower beds are often enclosed by special higher fences or wire.

Two strong railings or balustrades round Parisian recreation areas are
shown in figs. 963 and 9644; the latter figure also shows the gate. As these are intended really to enclose the areas such railing should be at least 1.10m better 1.25 or 1.35m high; in some places they are as high as from 1.35m to 2.50 m. The disadvantage of having them so high is that they interfere with the view from outside.

The general use of such recreation and playgrounds also in German cities would be very desirable.
a) **Park Gardens and Park Woods**

Parks include on the one side park gardens and park woods covering connected areas of from 5 to 200 ha and on the other the long planted walks or park promenades (parkways). As regards the former only those areas come under consideration for us that are generally accessible to the urban population, offering opportunity for exercise in the open air, the enjoyment of nature, recreation and companionship, such as public gardens, folkgardens, city parks, woods, etc.

The larger these artificial landscapes can be made the better – but with a definite limitation which is based on the fact that the value of a park or woods sinks the farther it is removed from the city, hence that for a large city several smaller areas are preferable to one large park or woods. 5 ha was given above as the minimum size; it is hardly possible to develop landscape scenes with walks and pleasure grounds for large numbers of people on smaller areas. It is better if possible to have

---

Recreational place Caecilien-Kloster in Cologne

---

**Fig. 954**

---

**Fig. 824**
Fig. 955
Square des Innocents in Paris

Fig. 956
Square Ste.-Clotilde in Paris
Square Montholon in Paris

Fig. 957

Square Montholon in Paris
Fig. 958
Square St.-Jacques in Paris
As no city of 20,000 or more inhabitants should be without its public garden, so too large cities need several parks so that all parts of the population may be benefited by them. An average proportion would be one park of 10 ha in size for every 50,000 inhabitants. If the density of the population were 250 persons per 1 ha the relation of the public garden area to the city area would be 1:20, not including the ornamental streets and squares. If these be included the average relation would be 1:10 as that of 100 ha of city area about 30 ha would be in ordinary streets and squares, 10 ha in planted area and 50 ha in building land. If the proportion of planted area is greater so much the better. In addition there may be one or more larger wooded parks outside of the city limits. Areas of less than 30 ha in extent may be regarded as park gardens, those above that as park woods.

The city park is either open or closed according to whether it is accessible from all sides or is entered through certain gates. The latter is more like a private park in the country; it is desirable for city purposes only if owing to local conditions the public garden is not surrounded by streets and properties but has to be laid out at a certain distance from the city and therefore requires greater protection. Open, readily accessible parks and woods, like the Tiergarten in Berlin, the Hofgarten in Düsseldorf, the Wallanlagen in Hamburg, are better adapted to city needs. There is no reason why special parts (restaurant gardens,
Fig. 961
Tree alleés with benches between Mignard and Spontini Streets in Paris

Fig. 962
Landscaped Square de la Réunion in Paris

Fig. 963
Enclosure of the Square des Innocents in Paris
concert gardens, flower gardens, botanical gardens, greenhouse) should not be separated from the open park by some kind of enclosure. In general it is ugly to make the backs of properties the boundaries of a public garden because the view of the yards and rear buildings is not usually calculated to rejoice the eye of the spectator or to add to the landscape. But an exception, and indeed an exception worthy of imitation, is the arrangement by which the park connects directly with the properties the owners of which have the right of entry, and which are built with special consideration for the park. A magnificent example of this is seen in the Parc de Monceaux in Paris (fig. 965) which is surrounded by buildings on three sides in such a way that between the park enclosure and the closed fronts of the houses there are private gardens of from 10 to 13 m in depth from which little gates lead into the public park. In this way park dwellings are formed that are among the finest in Paris.

Similar to this is the Blasewitz wooded park near Dresden, laid out by Neumann and improved by Bertram (see accompanying plate) the public street fronts of which are bordered by a circle of villas which have private entrances to the park in the rear. This arrangement is of great economic advantage as by making the most use of the street fronts for building the cost of the park construction is reduced and a special enclosure which would otherwise be necessary because of the distance from the city, is not essential. Other examples of this sort are shown in fig. 966 in Magdeburg and fig. 967 after a design by R. Hömann. It seems as if such inside parks were becoming more and more popular both in Germany and in Switzerland. It is important as we have already said that the architecture
of the houses surrounding the parks, whether they be built in closed rows or detached, should be such that both the view of the parks from the houses and the houses form the parks are pleasing. This is especially true of areas like that in fig. 968 which, like the Parc de Monceaux, is not entirely surrounded by houses.

In almost every case these parks are laid out in the natural or English style, because this best corresponds to the purpose of bringing a bit of nature into the city or into its neighborhood. Public gardens in the French or Italian style are now seldom laid out; but single parts in this style, like allees, terraces, flower gardens etc. may well be used at the entrances, in front of buildings, meeting places etc. A park should be not merely a beautiful piece of nature but should show the work of human hands and human minds. Hence we shall always find a mixture of natural landscape and geometrical lines.

The making of a park is divided into the disposition of the ways, the treatment of the ground, the vegetation, the arrangements for recreation and social gathering and the artistic decoration. The latter will be dealt with under c in this chapter.

On the one hand the ways should form the necessary, nearest possible connections between the interesting points of the garden, and on the other they should lead the spectator unconsciously in such a way that he sees the landscape views one after another in the most effective succession. The direction and situation of the ways should always be natural; hence circuitous routes should not be taken where natural conditions allow of the point being reached directly; the way must not lead over a hill of the line of progress on the level is without obstacles. Also in order to realize a curve that look beautiful on paper unpleasant conditions of ascent must not be carried out; even an ascent leading to the top of a hill from which a view is obtained must be made as natural and unconscious as possible. Straight lined ways are admissible in parks only as exceptions because straight lines do not accord with the natural formation of the ground and the variety of the vegetation and because the views seen from a straight-lined way lack variety. Only in large traffic ways cutting through the park which are not intended as pints from which to view the landscape, in approaches to important works of art which may form terminal points and finally in the neighborhood of buildings are straight lines in the ways permissible and then only for short distances. Apart from these the ways should run in pleasant curved lines in such a manner that they are pleasing to view and so that the park figures which they outline appear, as far as they can be seen, in attractive forms. As such figures are seen much foreshortened the ways should be so arranged that they are viewed in the long rather than in the cross direction. Care should be taken that the area is not too much cut up by ways; those without a definite purpose are superfluous and had better be omitted. The ways must never be regarded as the principal but only as the subordinate parts of the park; the chief end is to choose the right kind of vegetation, group it gracefully and to produce fine landscape views.

The width of the footpaths is from 3 to 10m; it varies according to the need. The ways may only be planted with rows of trees if they do not affect the landscape views; hence shady walks, lovers lanes etc. should be situated along the edges of the landscape or inside dense groups of foliage. Driveways and riding paths are admissible only in parks of considerable size, at least more than 10ha. In addition it is advisable to separate the footpaths
Fig. 965
Parc de Montceaux
in Paris
from the driveways and riding ways and if possible also to the two latter from each other. The division is made by narrow or wide park fields or at least by strips of lawn with or without rows of trees as shown in fig. 969. If the formation of the ground admits of it charming results can sometimes be obtained by leading one way – it had best be the footpath – across the other by means of bridges or tunnels. It is desirable to have all the ways meet at some one point so that people may easily meet one another and find their way without difficulty; spots from which a fine view is obtained, shady seats or small ornamental buildings are excellent points for this purpose.

The treatment of the surface of the ground is the necessary accompaniment
of the arrangement of the ways, whether the formal or the natural garden style is used. An undulating surface is more beautiful and effective than a flat or steadily ascending one because it lends variety to the views and admits of a more attractive grouping of vegetation and lawns, also because a garden appears the more attractive the more opportunity there is to look at it from above. Hence the terraces and steps in the Italian gardens; hence also the high-lying paths and the hollows in the surfaces of the English parks. Looked at from a certain distance a slightly rising lawn or flower garden presents a much better appearance than a level one, or worse one that slopes downward.

But the gardener must never do violence to the natural formation of the ground; he may improve it and slightly change its form but only in so far as these changes do not oppose its natural shape. The artificial surface of the park must always look as if nature herself might have formed the ground as it is. It must not look artificial; all that is unnatural must be avoided. Bodies of water and streams belong in the lowest points, grottos of rock on steep slopes or similar places where they would naturally be, meadows in the valleys, woods or groves on the heights etc. It is a matter of course that points and ways affording fine views should be on the sides or tops of slopes; at the same time these views should be not only of parts of the park but also of the whole surrounding landscape, as well as of prominent buildings; mountains and other distant views should be carefully

Fig. 967.

Hömann's Entwurf für einen Innenpark.

Fig.967
Hömann's draft for an inside park
taken into account. For the design as well as for the execution a complete topographical plan of the garden area is indispensable; the appearance of the landscape views and especially the perspectives are largely dependent on the topographical lines. Once the whole formation of the park surface is established the work on the details can be begun. The lawns and plots must be closely adapted in their shapes to the character of the land; pattern-like hollows with the customary elevations at the edges and where bushes are planted are entirely inadequate. As the relation between the park and the natural scenery about it is a very close one no imitation of an already existing park can be made in another place; every new park must be a development and supplementation of the natural material at hand.

As the landscape views that the designer has in mind when a park is planted can be realized only after years have passed the planting must always be considered only
Fig. 969
Old Allée in Versailles Park

Fig. 970
Battersea Park in London
preparatory. A park without old trees is only in the process of becoming a park; without water it is a deficient one. Young planting must retain the character of woods and consist generally of trees that predominate in the landscape. The grouping requires natural free lines with careful consideration of light and shade, light and dark tones and should be so combined that good views are obtained from certain points. In this respect the work of the landscape gardener is rightly placed side by side with that of the landscape painter. Both must learn from nature the way her beauties are created and both must seek to idealize and reproduce them, the one in reality, the other on canvas.

The chief difference of light and shade is expressed in the light bright lawns and the dense dark groups of trees. The higher slopes should be covered with woods which gradually decrease in density towards the bottom of the valley. The proper relation between woods and lawns is therefore determinative in making the landscape peaceful and pleasant or dark and rugged. Another way of obtaining color effects is to mass the trees in such a manner that they meet the eye like the wings of a stage which produces an artistic toning down and graduation of the views; a few single trees or groups of trees planted in front of the outlines of the massed trees relieve the hard impression and intensify the appearance of easy naturalness. And just as the painter finally puts in a few high lights or very deep shadows, so too the gardener is able by touches of light and shade, by lightening one group of trees and making another denser, to intensify or complete the intended effect. But the contrasts by means of which both the gardener and the painter obtain the greatest effects do not consist in mingling or uniting what is contradictory but in contrasting what is rough with what is soft, the harsh and the mild, the light and the dark.

The main view of the park should be developed from the point where the people gather, hence from the principal resting place, the restaurant building etc. Also the first view obtained on entering the park should be especially considered. It is customary to beautify the foreground at such points by flower gardens in the conventional style and by fountains and statuary; but the main view should still be of the whole park. In wide curves, in artistically increased perspectives the whole landscape should lie before us and when we leave this point and stroll on into the landscape we are confronted by a series of ever changing views; at important points distant views are kept open and sometimes in the dense woods we are surprised by a sudden light opening through which we catch a clear glimpse of a beautiful vista.

It would take us beyond the purpose of this volume to enter more fully into the principles and details of landscape gardening. These suggestions should suffice for the architect, for the “city builder” it is not his task to lay out parks without the aid of the landscape gardener. He must however from and train his judgment of this subject; his artistic taste will then enable him to understand the details. He is mainly concerned with choosing the locality and making the programme for smaller garden areas as well as for parks. Hence be it once more emphasized that the low lying parts of the city are the most suitable for this purpose (see heading 210). Just as pieces of architecture look best when situated on a height or an ascent, that is when we must raise our eyes to look at them, gardens appear at their best when we look down at them. It is of great value when the locality chosen for such a garden or park already possesses trees, or better woods, as was the
Fig. 971
Parc des Buttes Chaumont in Paris
case for instance in the Tiergarten in Berlin, in the Bois de Boulogne in Paris and in the Bois de la Cambre near Brussels. Under such conditions it is easy to make shady walks, magnificent natural groves, which otherwise would take decades to develop.

Opportunities for recreation, diversion and social gatherings are of paramount importance in the public park. There should be grounds for people’s festivals and children’s games, especially separate children’s playgrounds, grounds for ball games or croquet, an outdoor gymnasium, a racetrack, a range of shooting and similar arrangements. A lake or pond bordered partly by low meadows, partly by steep shady banks offers an opportunity for boating in summer, skating in winter. Besides these things outdoors there should be half-covered structures like arbors, colonnades etc. and finally a roomy, closed restaurant building is always indispensable, serving not only as an attraction during doubtful seasons but also as a refuge in case of showers. But once the necessity for such a covered building is seen it is easy to go a step farther and make a concert hall in the restaurant building. It this main building is carried out in monumental style it occupies the same position with regard to the park as a country house or castle does to the
private park. Examples of this are seen in the Stadtpark in Vienna, the Palmengarten in Frankfurt a. M. the Stadtgarten in Karlsruhe and in other places. Smaller structures like gardners’ dwellings, nurseries, a dairy, a shelter for riders, are placed in secluded parts of the park where they may aid in forming pretty scenes. For foliage is very effective against the background of light-colored walls. These buildings should not however be painted white which from a distance produces the effect of a wash out on the line, but should be light grayish or brownish in tone that harmonizes with the green and throws the colors of the landscape into relief. Dark slate roofs look like a hole in the landscape, consequently red is an advisable color and one that is found in some kinds of slate and in most roofing tiles.

What has been said of the treatment of park gardens applies also to the treatment of park woods with the natural distinction that in the latter case the proportions are greater, there are not as many paths and the denser mass of woods and groves with a few meadows and vistas takes the place of the carefully cultivated open character of the garden. There is no sharp division between them; the garden merges unnoticeably into the woods.

The English parks generally consist of rural scenes with wide lawns and little woods; sometimes even trees seem to be lacking. People sit or play on the grass consequently few paths are necessary; flowers are not much used for ornamentation; domestic animals roam about and graze at large. Fig. 970 shows Battersea Park in London, about 75 ha in extent, unusually rich in flowers and foliage plants and characterized by the usual extensive grassy fields. Hyde Park (158 ha), Regents Park (190 ha) and especially the new Victoria Park (117 ha), show the English characteristics of wide driveways, extensive grassy areas, numerous grounds for athletics and games (tennis, cricket etc.) in a perhaps still more pronounced manner.

In North America parks, patterned after the English ones, are widespread, especially in New York, Boston, Chicago and Washington. As long ago as in 1890 Chicago possessed besides a number of smaller areas, 10 larger public gardens with a total area of 2847 Morgen.3

The French parks often suffer under exaggeratedly small landscape scenes, too many little hills, valleys and ways, a superfluity of flowers and foliage plants. This is especially true of the Paro de Monceaux in Paris (fig. 965), where the surrounding of the tree trunks and bushes with regular borders of flowers, the plentifullness of horticultural and architectural motives, the overloading with colored foliage indisputably produces an impression of magnificence but also of exotic artificiality. The same is true in a greater or less degree of several of the Parisian recreation areas discussed under heading 670. Less artificial and richer in grand landscape views and sheets of water are the park woods of Boulogne and Vincennes; wildly romantic scenery is found in the mountain parks on Montmartre and in the Buttes Chaumont (fig. 971). In the last named park which is only 27 ha in size, old stone quarries have been used and actual mountain scenes created with cliffs fifty meters high, grottos, waterfalls, a stone bridge thirty meters high and a suspension bridge 64 m in length which is stretched high in the air from rock to rock above the lake and street. Thus in the French parks we must admire the boldness and grandeur of the designs, the

---

3 See: New Review, May 1890
tasteful decoration and excellent technical construction of the ways, waterways etc. but the quiet simple beauty of nature is often lost in the mass of artificial ornamentation.

The parks in German cities try to avoid the exaggerations of English and French areas; they are carefully created landscapes combined or dotted with regularly formed gardens. They do not conceal their artificial origin and seek to adapt themselves as closely as possible to their purpose, recreation in the open air. As examples we give in figs. 972 and 974 the Humboldt-Hain in Berlin and the Volksgarten in Cologne which scarcely need further explanation; they are respectively 35 and 15 ha in size. The Humboldt-Hain, designed and executed by G. Meyer, is at the same time instructive, the plants being geographically arranged and the botanical names given. The Cologne Volksgarten, laid out by Kowallek, is fortunate in that the streets surrounding it are high and have changes of level amounting to 10 m. Mention should be made of several examples of amusement parks given in part IV, half volume 4 of this “Handbook”, Tivoli in Copenhagen, Palmengarten in Frankfurt a. M., Stadtpark in Mannheim etc. as well as of the Innocentia-Park and the Eppendorfer Park in Hamburg.4

The advantage of lying in a hollow between two higher streets is also possessed by the Oersted-Park in Copenhagen (fig. 973), but the treatment of the lake and the manner of planting leaves something to be desired. Nothing is more beautiful than parks that spread up out of the valley over the side of the hill with views down and into the distance! The environs of Rome, Naples, Florence, the garden-like towns on the Riviera, the park about the palace in Buda, the Wilhelms-Höhe near Cassel are well-known examples of such areas. The Gartendirektor Mächtig5 has beautified the Kreuzberg in Berlin in a similar manner; the whole slope of the mountain has been transformed into a public park with grand cascade-steps (fig. 975) in the axis of the Grossbeerenstrasse and of the National-Kriegerdenkmal.

b) Park Promenades

An intermediate thing between the park gardens and the city streets with rows of trees and garden areas, discussed in chapter 1 of this part, are the planted parklike walks leading out from the city, or in its environs; the park promenades. They have the same natural curved lines as the park gardens but are long like the city streets. But whereas the latter are surrounded by buildings the park promenades should as far as possible afford a free view of nature, over valley and city of which only the uglinesses should be concealed – in contrast to the park gardens and park woods which should offer landscape views in themselves.

Other park promenades serve to connect different parks in the city.

---

4 See: HAmburg und seine Bauten. HAmburg, 1890 pp286,287
5 See this design in: Deutsche Bauz. 1880, p. 237
Particularly in American cities, for instance, in Boston are the parkways running through the city and making all the public gardens in a certain sense one large park, developed in an admirable manner. It is not very rare to find one side of the promenade lined with country houses or city villas. Among these we should have to include first of all the ring promenades on the sites of old city walls which were discussed under heading 418 and illustrated by figs 596 to 598, parts of Bremen and Frankfurt. The authorities in those cities – not only in the large ones but also in towns – in which the walls and ramparts are still preserved, at least in part, should take the utmost care to preserve the ring promenades and develop them by horticultural treatment. The promenades that lead out from the city into the country are treated like parkways or country roads; in the former case the planting is more like a landscape in character, in the latter it is more regular and formal. Figs. 976 and 977 are two examples. Those ways that are intended either for foot passengers alone or for carriages and riders usually lead to a point where a fine view is obtained, to a rest or bathing resort, to a park, a forest or a cemetery. Especially in the main approaches to the city cemeteries there is room in many places for considerable improvement. Two terminal points of promenades, affording beautiful views, are shown in figs. 978 and 979. One of the finest city promenades in existence is the so-called Rheinanlage near Coblenz; it was laid out by command of the Empress Augusta and extends along the banks of the Rhine above the city for 3km. The accompanying plate gives a fair idea of it. It is in general a driveway and walk between rows of high trees (chiefly elms and plane-trees), ornamented both on the side towards the water and that towards the land with almost too plentiful horticultural and artistic decoration and widens in parts into large planted areas. In bathing and pleasure resorts and sometimes in other cities even the ways that lie in the farther environs of the town are beautified by horticultural and artistic decoration. If such park promenades are extended all round the city and connected with one another the whole locality is to a certain extent transformed into a single park area especially if there are small ornamental ponds and brooks; the few buildings and farms that adjoin it and the agricultural fields influence its character but do not detract from it. In this way a monotonous landscape can be beautified, one that is beautiful in itself can be made the most of. There are many examples of this in the surrounding of English country seats but they are also not lacking in the environs of our bathing resorts and towns which are the residence of a ruling prince. To the former belong Baden-Baden, Harzburg and San Remo, to the latter Potsdam and Wörlitz near Dessau. The treatment of such a park area is shown in fig. 980. Finally as examples of park promenades in the farther environs of large cities mention may be made of the beautiful Viale dei Colli which surrounds Florence on the hilly side to the south and affords beautiful views of the city and valley, and the Nuovo Passeggio

6 “Der Städtebau” 1905, p. 113.
del Gianicolo. The latter lies on the mountain slope of the Gianicolo, embraces a part of Rome beyond the Tiber and offers, especially at sunset, beautiful and far views of the eternal city, the Campagna and mountains.

c) Decoration

Just as dwellings and city streets must be furnished and ornamented so too parks require adornment. The latter is the more necessary the smaller the park is, hence in the city gardens proper and in the ornamental and recreation areas discussed under d and e in the last chapter.

The nature of the articles used for adornment is either horticultural or architectural. The former will be found exhaustively treated in a textbook of gardening, the latter in a work on garden architecture. Brief mention is all that can be undertaken here.

To horticultural decoration belong all kinds of flower pieces (compare headings 664 and 665, figs. 927 to 944 and fig. 947), ornamental ponds and fountains, grottos and labyrinths, arbors and places to sit; also flower stands of iron and wood, of tree stumps and pieces of rock; single pieces of rock and boulders, covered with ferns, moss and climbing plants; also climbing plants on walls and trees.

Architecture comes into play in all kinds of garden furniture, steps, terraces and fountains (fig. 981 to 984), in the equipment for conducting water and illuminating the grounds (fig. 985 & 986), in bridges, cascades, seats, colonnades and verandahs, in notice boards and signposts (fig. 987 to 989 and 990), in fences and gates, pavillons and shelters of all kinds, in Belvederes and all
Figs. 974
Layout of the new Volks (People’s) garden in Cologne
kinds of houses for swans, ducks and other birds, in large and small buildings for dwelling, refreshment and amusement.

The sculptor’s work is seen in monuments and other figures, in vases and fountains, in imitations of antique and modern sculpture.

It would take us too far to deal with all these things at length. It must suffice here to say that the garden with everything in and about it must be in harmony that the whole may express a single conception in some one style and that too much artificial decoration is rather to be feared than too little. But nowhere do works of art find a more suitable, effective place than in public gardens where they can be looked at and enjoyed in peace and quiet and where the human mind, calmed and elevated by the influence of nature, is most ready to receive the impressions of art.

In parks laid out in the Italian and French styles the placing and arrangement of artistic ornaments is more or less dependent on axial relations. But even in landscape gardens works of art cannot be arbitrarily set up. Keeping open or closing the intended lines of vision, careful consideration of the distance from

---

7 See also part IV, half vol. 4 of this “Handbook” (part IV, sec 2, chapter 2: Volksbelustigungsgärten und sonstige größere Anlagen für öffentliche Lustbarkeit.
which it is desirable to view the object (compare headings 600 to 603), choice of effective background, the fitting of every object into the landscape – all these are considerations which rightly limit and guide the fantasy of whoever places the works of art.

An artificial water supply is as a rule indispensable, either by connection with existing water works or by constructing them especially for the park. Because of its life and its contrast to the plants and ways, water gives the greatest charm to a park: a lake or clear pond is rightly called the eye of the landscape.

As regards the construction of the ways reference may be made to headings 558 to 566; as regards illumination to part V, chapter 2. On account of the vegetation electric light is indeed to be preferred to gas; but we can scarcely expect that the latter should be entirely excluded. Every possible precaution however must be taken to prevent the poisonous fumes penetrating into the soil. In order that the fumes may easily reach the air it is customary to lay the pipes very near the surface, that is directly underneath the sod or the surface of the ways; it is still better to lay them above ground, on the surface wherever this can conveniently be done.

Open parks and open ornamental areas require illumination at the same time and to the same extent as public streets and squares; enclosed ornamental area (see heading 667) require no light at night or only on very special occasions; the enclosed park or recreation area can dispense with illumination as soon as the gates are closed late in the evening.
CONCLUSION

If, at the end of our considerations we glance back over the whole field of city building, we will gladly recognize that the significance of this word is greater than appeared in the introduction. City building is not only the entirety of all that construction which makes the building of dwellings and the traffic possible to the inhabitants, and the erection of public buildings to the community; city building does not provide only the ground and the frame for constructive individual activities, but it is also a comprehensive activity that provides for the physical and mental well-being of the inhabitants; it is the fundamental practical public guardian of sanitation and health; it is the cradle, the robe, the ornament of the city, the comprehension of all private and public enterprise in a higher unity. City building is an important, independent art. Through it a very large part of the population receives the external comforts of life; what is produces is for the poor as well as for the rich. In city building we see the artistic activity of equalizing justice, cooperation in the removal of social abuses and hence an active influence for social well-being. It is not very long since the German, coming home from abroad, especially from Belgian and French cities, sadly perceived how far behind his home cities stood in the various provinces of city building and also how little the cities themselves were conscious of this neglect, how they devoted themselves with enthusiasm and earnestness to the cultivation of art and science without feeling that the ground on which they lived and the surrounding in which they sought refreshment and recreation were directly opposed to these efforts. They might be compared to a sage in a torn coat in a dusty attic. The last decades have brought about great changes in these conditions particularly owing to men like R. Baumeister and C. Sitte; the political rise of the Fatherland has also
Landweg-Verbesserung in der Umgebung der Stadt.

Fig. 980

Beautification of rural path near the city
benefited the development and the building of cities.

It is not rare now for Belgians and Frenchmen to visit our cities to learn from our progress.

But there is still much to be done to remove the old evils and new generations like new tasks always require renewed activity. It is not alone the architect or technical expert that is concerned in this activity; he is seldom given the leading position; he is mainly the workman and at the same time the instigator. The political representatives of the citizens must cooperate with him and above all he needs the aid of the energetic administrative officials. This final work is addressed to them all; ever to bear in mind the high requirements that city building makes of them, under which many have hitherto understood only the pavement and the building flush-lines but which means to the man with a grasp of the subject that whole artistic form and technical robe in which the city appears before us and which is one of the principal works for the welfare of mankind.
Fig. 985

Park street lamp with flower base in Hamburg
Park-Candelabrum mit Blumenstöckel zu Hamburg.

Fig. 986

Park street lamp with flower base in Hamburg
Fig. 987
Sign in the zoological garden in Cologne

Anzeigetafel im zoologischen Garten zu Köln.
1/25 n. Gr.

Fig. 988
Sign in Hamburg

Anzeigetafel zu Hamburg.
1/25 n. Gr.

Fig. 855.
Fig. 856.

Promenaden-Anzeigetafel zu Altona.
\( \frac{1}{25} \text{ n. Gr.} \)

Fig. 989
Promenade sign in Altona

Fig. 857.

Wegweiser im Park.
\( \frac{1}{50} \text{ n. Gr.} \)

Fig. 990
Signpost in park
Appendix
A. LAWS

I.
Prussian Law of July 2, 1875,
relative to the laying out and alteration of streets and squares
in cities and rural districts

§ 1.
For the laying out or alteration of streets and squares in cities and rural districts the street
and building flush-lines are to be established by the magistrate (Gemeindevorstand) in
agreement with the local board according to the public needs and with the consent of the
local police authorities.

The local police authorities may require the establishment of flush-lines if, in the
exercise of their authority, they perceive it to be necessary.

A street in the sense of this law includes the roadway and the footways.

The street flush-lines form at the same time the building flush-lines, that is the
boundaries beyond which buildings may not be constructed. For special reasons however
a separate building flush-line, but one that, as a rule, retreats not more than 3m from the
street flush-line, may be established.

§ 2.
The establishment of flush-lines (§1) may be for single streets or parts of streets or,
according to the probable needs of the near future, building plans for larger areas may be
made.

If the matter at issue is the rebuilding of whole city districts that have been
destroyed by fire or other catastrophes it is the duty of the local board to decide at once
whether and to what extent a new building plan is to be made and if so to provide
immediately for the establishment of such a new plan.

§ 3
In establishing flush-lines consideration is to be given to the needs of traffic,
protection against fire, and public sanitation, also care is to be taken that the streets and
squares are not rendered unsightly.

Hence provision must be made for adequate width in the streets and for good
connections between newly constructed highways and those already in existence.

§ 4
Every establishment of flush-lines (§1) must contain an exact designation of
the properties and parts of properties affected and must fix the level and indicate the
intended drainage of the streets and squares involved.
§5

The consent of the local police authorities (§1) may only be refused if these authorities find that the exercise of their duties requires such a refusal.

If the magistrate of the district does not acquiesce the departmental committee decides the matter at his request.

The same body, at the request of the local police authorities, decides the question of needs if the magistrate of the district (Gemeindevorstand) refuses the establishment requested by the local police authorities.

§6

If the plan of the intended establishments (§4) affects a fortification or if public rivers, roads, railways or railway stations are involved the local police authorities must see that the authorities involved are early given opportunity to protect their interests.

§7

After the consent of the local police authorities, or of the departmental committee (§5) has been obtained the magistrate must make the plan public so that it may be examined by everyone. The manner in which this is done depends upon local custom but at the same time notice must also be given that objections to the plan must be filed with the magistrate within a certain definite period of not less than 4 weeks.

If the establishments affect only single properties it is sufficient, instead of making the plan public and laying it open to view, to notify the owners of the properties affected.

§8

If the objections that are raised (§7) cannot be settled between the magistrate and the persons who raise the objections the departmental committee disposes of them. If no objections are raised or after they have been finally settled (§16) the magistrate must formally establish the plan, lay it open to public view and give notice according to local custom of the manner in which this will be done.

§9

If in the establishment of flush-lines several districts or towns are affected a conference on the matter must take place between the magistrates of the communities involved. Points about which the magistrates fail to arrive at an agreement are to be referred to the departmental committee for settlement.

§10

All flush-lines established prior to the enactment of this law can be done away with or altered only in accordance with the preceding regulations. For the establishment of new or the alteration of existing building plans in the cities of Berlin, Potsdam, Charlottenburg and their immediate surroundings the royal consent is necessary.
§11

On the day on which the plans are made public (§8) the regulation restricting property owners from building or making alterations that extend beyond the flush-line becomes effective. At the same time the town or city receives the right to take from the owner the area determined by the street flush-lines for streets and squares.

§12

Local statutes may provide that on streets or parts of streets which have not yet been completed, according to the regulations of the building police, for public traffic and for construction, dwellings with an entrance on these streets may not be erected.

The statute must fix the more precise regulations within the limits of the foregoing order and requires the approval of the district councillor. Objections to the decision of the district councillor must be presented to the Provincial Councillor (Provinzialrat) within a period of 21 days.

After that statute has been approved it must be made public according to local custom.

§13

An indemnity for the limitation of construction provided for in §12 cannot be demanded; and for the deprivation of limitation of property in consequence of the establishment of new flush-lines it can be demanded by property owners only in the following cases:

1. if the areas for streets and squares are given up to public traffic at the request of the city or town
2. if the street building flush-lines affect existing buildings and the property is cleared of buildings up to the new flush-line;
3. if the flush-line of a street that is to be newly laid out affects an as yet unbuilt on building plot which, at the time this new flush-line is established, lies on an already existing street that is completed and ready for public traffic and for construction, and the buildings are erected in the flush-line of the new street.

In all cases where land is taken for streets and squares indemnity is granted. It is also granted in those cases under No 2 in which the limitation results owing to the establishment of a building flush-line that differs from the street flush-line if the area lying between these two flush-lines was formerly built on.

In all the above mentioned cases the owner may demand that the city or town take over the whole of his property if the flush-line cuts it up to such an extent that the remaining piece is not fit for construction according to the regulations of the building police.
§14

In fixing the indemnities (§13) and carrying out expropriation of land the §§24ff of the act of June 11, 1874, relating to the expropriation of land, are applicable.

Disputes about the dates when claims for indemnities become due must be settled by the courts.

Unless for special legal reasons some one individual is responsible for the indemnities they must be raised by the city or town within the limits of which the land in question lies.

§15

By local statutes it may be provided that when a new street is laid out or an existing one extended, if such a street or extension is intended for construction, and when construction is begun on hitherto unbuilt streets or parts of streets, the promoter of the enterprise or the owners of the adjacent property—the latter as soon as buildings are erected on the new street—are responsible for the “clearing”, equipment, drainage and illumination of the street to the extent in which it is required and for their maintenance at periods not exceeding 5 years, or they may be required to pay a sum sufficient to cover these costs. The owners of the adjacent property cannot be assessed for more than half of the street width and if such width exceeds 26m for not more than 13m width.

In calculating the costs, the cost of the first construction of the street and of its maintenance must be taken and distributed among the owners according to the length of the street frontage of their properties.

The statute must fix the more precise regulations within the limits of the foregoing order. As regards its approval, contestableness and publication the rules given in §12 apply.

For the city of Berlin until such a statute shall be issued, the regulations of December 31, 1838 remain in force.

§16

In the cases of §§ 5, 8, and 9 appeals against the decision of the Kreisausschuss (departmental committee—no exact English equivalent) may be filed within a period of 21 days with the Bezirksrat (district councillor—no English equivalent).

When it is a case of re-building whole parts of towns or cities destroyed by fire or other catastrophes the period in which such appeals may be made is 1 week.

§17

The duties and obligations assigned to the Kreisausschuss (departmental committee) and in a higher instance to the Bezirksrat (district councillor) in §§5, 8 and 9 are endorsed by the Bezirksrat and in a higher instance by the Provinzialrat (provincial Councillor—no English equivalent) in towns with more than 10,000 inhabitants belonging to a rural district or, when several townships are involved (§9) if one of them is of this size. In urban districts the endorsement lies with the Provinzialrat and, at the
request of the city in a higher instance with the Minister of Commerce.

In Hohenzollern lands the Amtsausschuss (official committee—no English equivalent) takes the place of the Kreisausschuss and also approves the local statutes (§§ 12, 15). Appeals are made to the Landesausschuss (committee of the estates of the realm—no English equivalent)

§18

Until Kreisausschüsse, Bezirks- and Provinzialräte are formed in the various provinces of the monarchy the Bezirksregierung (district government—no English equivalent) must perform the duties accruing from the passage of this law.

Decisions in the higher instances, §§5, 8 and 9 are made by the Minister of Commerce, in §§12 and 15 by the Oberpräsident (highest administrative official at the head of the province—no English equivalent, similar to Lord Lieutnant).

For the city of Berlin, until a separate province of Berlin is formed, the exercise of the functions assigned in §§5, 8 and 9 to the Kreisausschuss is performed by the Minister of Commerce etc., the approval of the statute (§§ 12 and 15) rests with the Minister of the Interior.

§19

All general and special legal acts that conflict with the provisions of this law are herewith abrogated.

All the regulations issued by administrative authorities, police regulations, local statutes that conflict with the provisions of this law are nullified.

§20

The Minister of the Interior is commissioned with the execution of this law.

The following instructions for carrying out the foregoing law were issued on May 28, 1876 by the Minister of Commerce, Trade and Public Works.

Instructions for the Establishment of Flush-Lines and Building Plans.

In accordance with the act of July 2, 1875 relative to the laying out of streets and squares in cities and rural districts the following instructions and regulations are issued in order that the process of establishing flush-lines may be made as uniform as possible and that a sufficient basis may be obtained for judging of the practicability of the intended establishment of flush-lines.

§1

General instructions.

For the establishment of flush-lines according to the act of July 2, 1875 in as far as the appended regulations do not apply, the following measures are to be taken:
I. Situation Plans;
   a. flush-line plans in as far as the establishment of flush-lines in the
      construction of or alteration of single streets or parts of streets is concerned
   b. building plans in as far as the establishment of flush-lines for larger
      areas and whole districts is concerned;
   c. general plans

II. Elevations, under which are understood:
   a. longitudinal profile
   b. cross sections,
   c. horizontal curves and figures of the elevations in the situation plans

III. Written Explanations

§2
These proposals should present clearly and distinctly:
A. the present condition,
B. the condition that will result from the establishment of the flush-lines
   when the streets and squares are laid out.
The proposals must be made or endorsed by a certified surveyor and must be approved by
a duly qualified architect or a building official in the employ of the city or town who can
certify their correctness with his signature.

§3
A. Presentation of the Present Situation
   I. Situation Plans
The scale to which the situation plans (flush-line and building plans) are drawn must not
as a rule be smaller than 1:1000. Connecting streets must be presented in connection. If
consequently the drawings of larger building plans are too widely for convenient use (12)
they may be drawn to a smaller scale, not smaller than 1:2500. In such a case a separate
flush-line plan on a scale of at least 1:1000 of each street on which the flush-lines are to
be established, must be presented.
   Every project must be accompanied by a general plan for which an existing
printed or drawn plan or apart of such plan may be used.

§4
The situation plans must be extensive enough to make it possible to judge of
the requirements that must be made in the interests of traffic protection against fire and
public sanitation, in accordance with §3 of the act of July 2, 1875.
   All existing structures, streets, ways, yards, gardens, fountains, open and covered
drains etc, all boundaries must be indicated in this plan with black lines and, as far as
clearness requires it, must be colored but only faintly. In addition the numbers or other
marks of identification by which the separate building plots are entered in the register of
landed property and the names of the owners must be written in on the plan. Signs and figures referring to the present condition must be black. Every plan must be provided with a north line and a scale.

§5
II. Elevations

The indications of the levels must refer to a specially designated, as far as possible well-known fixed point, as for instance to the zero mark on a water gauge in the neighborhood, best of all, of the Amsterdam water-gauge and must be exclusively in positive figures.

Of every street projected in a flush-line or building plan, in as far as the exceptional regulations appended (§13) do not apply, a longitudinal profile on the longitudinal scale of the situation plan belonging to it and on an altitude scale of 1:100, must be presented. The line of the level which as a rule is to be drawn in the middle of the roadway and is to be interrupted by stations 100m apart with the necessary between stations at a distance of at least 50 m, must be indicated with its stations in the situation plans by a dotted red line.

Where considerable changes in the surface of the ground are to be undertaken or where near buildings, walls, ways etc require special consideration cross sections are to be given. These must be on a scale not smaller than 1:250 and if they are not made at right angles to the main level their position must also be given in the situation plan.

In addition, if the ground is hilly this must be indicated in the building plans by horizontal curves at distances of from 1 to 5 m drawn in black dotted lines and the altitude figures given.

Altitudes must be given in meters and the figures rounded off to two decimal places.

§6

The altitudes of the existing streets and their surroundings must be so given that it is entirely possible to judge of the demands of traffic and of future drainage, also of the conditions of a possible later continuation.

The highest and lowest levels of all the waters that may affect the construction in view must be given, also existing sluice-sills, water-gauges etc, especially the water levels as far as they have been ascertained or seen necessary. In particular cases, the depths of the swamps or other characteristics of the ground that may affect the construction of streets, the thresholds of existing buildings, the level of the rails on neighboring railways etc all these must be clearly indicated in the profiles. Bodies of water are to be tinted blue and described, all other objects to be in black, the lines of the ground to be washed in brown.
§7

Presentation of the Future Condition

General Instructions.

The setting up of the projects requires careful consideration of present needs and of those of the near future, special attention being paid to those points mentioned in §3 of the act of July 2, 1875.

In the interest of the furtherance of public sanitation and of security from fire a practical distribution of the public squares and fountains must be provided for.

As regards the street width in new streets it is advisable to assume that the limit beyond which building may not extend is:

a. in streets forming the main arteries of traffic not less than 30m
b. in side traffic streets of considerable length not less than 20m
c. in all other streets not less than 12m

As far as possible the grades of the streets under a and b should be not more than 1:50 and 1:40 respectively, that of the gutters should be not less than 1:200.

§8

Special Instructions

I. Situation Plans

In the general plan the streets and squares to be newly laid out or altered should be clearly indicated in red.

In the situation plans the projected flush-lines should be drawn in with heavy vermilion lines. If they are not identical with the street flush-lines the latter should be indicated with lighter strokes and the space between washed in with pale green. The projected gutters should be indicated by sharp dark-blue lines, covered drains with dotted lines and the direction of the current indicated by blue arrows, the streets and public squares to be pale red, those sides of the streets that are not to be built on, green.

Existing buildings or parts of them which need not be pulled down when the flush-lines are established should be washed in darker in their characteristic colors than those to be demolished.

The names, numbers or other designations of projected streets and squares as well as their width are to be written in in vermilion.

§9

II. Indications of Elevations

In the longitudinal profiles the projected elevations of the streets especially the lines of the crowns of the streets should be drawn in in vermilion. The bridges, sluices, subterranean water drains, etc should be indicated with their width and heights.

At all the points where the slope is interrupted, at crossings, branchings of streets and other characteristic points vermilion is to be used, but figures referring to the levels of the drainage should be in blue.

The length of the street lines from one point of interruption to the next together
with the proportional figures of the slope should be written in vermillion above the profile, the names, numbers or other designations of the streets above or below them.

If several longitudinal profiles belong to one situation plan care must be taken that the points where they join agree and are clear.

§10

If every street in which flush-lines are to be established as many cross sections are to be made as there are different width in the street. If there are special conditions, mentioned in §5, a correspondingly greater number of cross sections are required.

The graphic treatment of the cross sections corresponds to that of the longitudinal profiles.

§11

III. Written Explanations

Written explanations must accompany the flush-line and building plans giving information relative to the nature, former use and drainage of the ground and the reasons for the changes contained in the projects.

This report must be accompanied by:
1. a list of streets, that is, a conveniently arranged list of the streets and squares that are to be changed, extended or newly laid out.
   The list should contain:
   a. names, numbers and other designations;
   b. the width of every street between the building flush-lines, respectively the street flush-lines;
   c. the slopes of the streets and their length according to their different sections and as a whole
2. Tables of survey of the property affected by the establishment of the new flush-lines, they must contain:
   a. the names, residences etc of the owners involved;
   b. the numbers or other designations by which the properties are entered in the register of landed property
   c. the size of the areas to be given up to streets and squares for public traffic
   d. the way they are to be used
   e. the designations and descriptions of the existing buildings or parts of buildings which will be affected by a street or building flush-line and which will have to be pulled down;
   f. the size of the remaining pieces of property
   g. the information whether, according to the building regulations these will be fit for building on or not.

§12

The drawings and written explanations should not be rolled but must be presented
flat in a portfolio. The single plans which should be mounted on linen and must be at least bound round the edges with tape, must not be larger than 0.50 by 0.66 m and if necessary must be so joined together that they can be opened and closed without creasing the plans.

§13

Exceptional Regulations

The plans may be limited to a situation plan with the necessary explanations if the matter involved is:

a. a simple regulation or alteration of existing streets without the necessity of changing the level of the roadway;
b. an inconsiderable extension of rural places or small towns that are not in the immediate neighborhood of large cities, in as far as the extension is not related to the construction of large factories, railways, cemeteries, or other institutions that might affect the security from fire, the traffic conditions and the public health;
c. the establishment of flush-lines that must be carried out at once and where, in the opinion of the Vorstand (no English equivalent) and of the town council, it is not necessary to present detailed plans.

In addition those authorities who, in the first instance, are concerned with the establishment of the flush-lines, may in other cases, for special reasons, declare the simplification of the plans admissible as an exception, and may declare which parts of the foregoing instructions (§§ 1 to 12) need not be carried out.

In all these exceptional cases including those under a, b and c the authorities who, according to the act of July 2, 1875 control the establishment of the flush-lines, may at any time during the process of carrying out the establishment, require the completion of the plans according to the instructions contained in §§1 to 12.
II
Extract from the Hessian Law of April 30, 1881, relating to Building Regulations in General

Article 4

For the laying out or alteration of streets and squares in cities and rural communities the street and building flush-lines are to be determined by the mayor and town council according to the public needs.

These flush-lines may be established in whole towns or parts of towns, respectively whole streets or parts of streets and this is necessary, especially if the building up of large areas, hitherto unbuilt on is intended, or if the need or a suitable opportunity is at hand to regulate or widen existing streets and public squares.

Every establishment of flush-lines must contain an exact designation of the properties affected including the buildings on them and must fix the level and the intended drainage of the streets and squares in question.

If the matter at issue is the re-building of whole city districts that have been destroyed by fire or other catastrophes it is the duty of the mayor and town council to decide at once whether, and to what extent, a new building plan is to be made and if so to provide immediately for the establishment of such a new plan.

New flush-lines must be established in parts of streets where they are lacking at the time that a new building is erected or an existing building rebuilt or altered.

Article 5

After the establishment of a building plan or of a street or building flush-line the plan must be exhibited to public view by the mayor, accompanied by the notice that objections are to be presented at the mayor’s office within a certain definite period which according to the extent of the plan varies from 14 days to 4 weeks.

If only single building plots are involved it is sufficient to notify the different owners of the property of the plan.

If the plan affects the rayons of the fortress Mainz or public rivers, roads, railways or railway stations, property of the state or public institutions or if several townships or cities are involved it is the duty of the mayor to see that the various authorities affected are early given opportunity to protect their interests.

Article 6

If the objections raised cannot be settled by those involved and the town council, those authorities that grant the permit for carrying out the plan must dispose of them; buildings plans of places and whole streets, after being approved by the Kreisausschuss, must be laid before the Ministry of the Interior and of Justice for approval. If the plans are only for establishment of flush-lines in parts of streets the approval of the Kreisausschuss suffices.
Article 7

After the plan has been approved the mayor must make it public without delay and must give notice according to local custom that the plans are open to view in the mayor’s office. If only single building plots are concerned special notice to the owners involved may also in this instance take the place of publication.

All establishments of squares, streets and flush-lines that have been made before or since this law was enacted can be nullified or changed only in accordance with the foregoing regulations.

Article 8

The regulations given in article 10 last paragraph, article 20 last paragraph, article 21 and 29 second paragraph are regarded as parts, respectively supplementary parts of the city building plan and are to be treated according to article 5 to 7.

Article 9

The street flush-lines form at the same time the building flush-lines, that is, the limits up to which buildings are to be erected and beyond which towards the street construction must not be carried out (art. 30). For special reasons however building flush-lines that differ from the street flush-lines may be established in order to provide space for front garden plots.

Article 10

In establishing the flush-lines the demands of traffic, security from fire and public sanitation are to be considered, care must also be taken that the streets and squares are not rendered unsightly.

Hence it is necessary to provide for sufficient width and drainage in the streets and for good connections between existing streets and new ones.

Public streets that are newly constructed or are extended with buildings on both sides should not be less than 12.5m wide in cities, 10m in the country, including sidewalks. A lesser width in new streets is admissible only where local conditions make it unavoidable.

Whether and in how far a street may be lined with buildings only on one side must be determined in the city building plan, respectively in the local statute that belongs to it.

Article 18

In committees in which the city building plan make ample provision for the laying out of new streets local statutes may be issued forbidding the erection of buildings outside the limits of the city building plan. Exceptions to this may only be permitted by the Ministerium in single cases in consideration of the purpose, situation or other conditions of the intended structures.
Article 21

The local statute belonging to the local building plan may provide that, when a new street is laid out or an existing street extended, or when buildings begin to be erected on a hitherto unbuilt on street, the owners or the properties fronting on the street must bear the entire or partial cost of the land required for the street and of the construction including gutters, drains, pavement and everything necessary to complete the street for public traffic. The owners of properties along one side of the street cannot be assessed for more than the cost of half the street width and if this width exceeds 16m not for more than 8m width.

In reckoning the cost the cost of the whole street construction must be calculated including the street crossings and distributed among the owners of property along the street according to the length of their street frontage. This calculation must not include the value of land belonging to the city or town that is used for the street.

Local statutes may further provide that the owners of properties on streets that are to be newly laid out may be assessed for the cost of constructing and maintaining the footways in front of their properties. The same regulation may be made applicable to already existing streets.

The local statute must fix the more precise regulations within the limits of the foregoing regulations and may require that, in order that these regulations be punctually carried out, the property owners deposit a certain sum to be fixed by the town council before building permits are granted them. This cannot be extended to include the maintenance of the footways.

III

Extract From The General Building Law of June 1, 1900
For The Kingdom Of Saxony.

Third Section
Establishment and Effect of Building-, Flush-line- and City Extension Plans

§15

If a hitherto mainly unbuilt on territory is to be opened to construction the establishment of a building plan according to the local laws is, as a rule, necessary. Such a plan can also however be made for territory, that is already built on.

§16

Building plans regulate in particular:

a. the flush-lines within which construction on building plots is allowed and according to which the area intended for traffic or for front gardens plots and that which is established by the administrative authorities as a “high tide district” is excluded;

b. the method of construction, the distance of the buildings from the street flush-lines and from the neighboring boundary, the height of the buildings, whether or
not industrial plants are admissable and the extent to which buildings may be erected on the rear land;
c. the regulation of water courses, the drainage of the territory and the raising or sinking of street crossings.

§17

Building plans must consist of the necessary drawings and the special building regulation to be issued relative to construction on the territory. The more definite requirements as to the manner and nature of the parts necessary to compose a building plan are determined by the instructions issued relative to the carrying out of the plan or by municipal regulations.

§18

In making building plans the following points must be considered: security from fire, the amount of public traffic that may reasonably be expected, public sanitation, servicable and adequate water supply and drainage, situation and development of the town or city or the part of the town or city in question, local housing conditions, and finally the appearance of the streets and squares. Special attention must be given to the following:

a. the position of the building blocks and of the street and building flush-lines must be adapted to the territory and should be so arranged that the dwelling rooms receive the sun;
b. the size and proportions of the single building blocks must be such that advantageous use of the land is made possible

c. the width of the streets and footways is determined according to the needs of local traffic and must be graduated according to whether the streets are main, side, or merely residential streets. In streets where the houses are detached and there is no through traffic proper, the width of the traffic area may be reduced to 8m. If it is expected that at a later date through traffic will pass through the street (especially street railways) and that it will therefore be necessary to widen the street, front garden plots of corresponding depth should be laid out on both sides. Private streets that serve as entrances to the rear of several properties may not be less than 6m wide. Streets in which the houses are built detached and where there is moderate through traffic as well as all streets in which the houses are built in closed rows must be at least 12m wide; streets with much business or through traffic must be at least 17m wide;
d. ascents in the streets should be distributed as equally as possible, great ascents, streets cut into the hillsides and straight lined streets of excessive length must be avoided.
e. in establishing the street directions short and convenient connections of the streets with one another and the main points of traffic should be provided for.
f. public open spaces and planted areas must be laid out in size, situation and
number so that they meet the demands of traffic and of public welfare. Sites for churches and schools as well as public playgrounds and recreation areas must be provided in sufficient number;
g. in determining the method of construction to be employed and the admissibility of factories and industrial plants the present character of the city or town or of the district must be considered as well as the existing needs. In all cases care must be taken that streets where the houses are built in closed rows—if such are not altogether excluded by municipal regulation—are frequently interrupted with streets of detached houses and in the outlying districts that density of construction and of population is reasonably limited.
h. front garden plots unless they are intended to be used later for widening the street should be at least 4.5m deep.
i. the admissible number of stories must be determined according to the character of the city or town in question and the width of the street. In rural places and villa districts the houses must contain at the most 3, in other districts 4 stories, and only in the central districts of larger cities, on especially wide streets and squares or along river courses that have been regulated at considerable expense to the owners of adjacent property are 5 stories admissible in exceptional cases. In the number of stories there must be included the ground floor, half stories if such exist and the attic if it is to be used as a dwelling;
j. the necessary courts and gardens in the inside of a building block must be provided for by regulations concerning their extent and position, if necessary by the establishment of rear flush-lines;
k. as far as construction on the rear land enters into the question at all it must be made dependent on the size of the court or garden and such structures may be used as dwellings on, as a rule, if all the windows of the rear building receive the light at an angle of at least 45° and the space between the front and rear buildings in suitable cases is laid out as a garden. Exceptions may be made under special conditions in the central districts of large cities. In no case may the rear buildings of a street form closed rows.
m. the building police authorities may retain the right of granting permission to those involved to construct residential streets in large building blocks that are suitable for the purpose but in such cases only detached houses of at most 3 stories may be erected.

§22

The building plan must be laid open to public view for at least 4 weeks. Public notice must be given of the time and place where it can be seen. Objections to the building plan must be made within 4 weeks from the beginning of the time when it is made public otherwise they will not be considered. Notice of this fact must be given.
If the building plan affects only single building plots it is sufficient to notify the
owners of the properties and set a period of at least 14 days in which objections may be made.

§23

The objections made to the building plan are settled by the building police authorities.

§24

If no objections are made or after they have been settled by withdrawal, compromise or decision the building plan must be laid before the Ministerium of the Interior for approval.

Fourth Section
Provision For, Construction and Maintenance of Public Traffic Areas.

§39

The land which is set aside for the streets by the building or flush-line plans must be given to the city by the abuttors and, if the city itself does not undertake the work must be constructed as a street by them and must be drained. On streets that are built on both sides the width of land which the abuttors must contribute must not exceed 24m, on streets built on only on one side 15m. Every abuttor contributes land:

a. along his property, thus, if his building plot is a corner one, on both sides
b. beyond this point as far as it is necessary so that the street reaches from crossing to crossing and in addition so that towards the one side of the building plot, it joins with a street that already serves traffic.

Fifth Section
Redistribution and Expropriation of Building Plots

§54

If suitable construction on the land lying within the limits of a building plan is prevented or made unreasonably difficult by the position, form or size of the building plots or parts of such plots, in order to gain suitable building plots the land may be redistributed by changing the boundaries of the position of the lots even against the will of the owners if such a redistribution is in the public interest and is requested either:

a. by the Gemeindevertretung (local board-no English equivalent)
b. by more than half of the property owners involved who together possess more than half of the whole area.

The request must be made of the building police authorities.

§55

If the redistribution of building plots is required the buildings on which have been destroyed by fire, water or other elementary forces, the local board is obliged to
undertake the redistribution as provided for §13

§56

Individual pieces of land lying in the redistribution territory which are built on or put to some special use (for instance market gardens, nurseries etc) the value of which it would be difficult to replace with other pieces of land may be completely or partially excluded from the redistribution.

The owner must however submit to simple changes in his boundaries even in this case.

§57

In order to carry out the redistribution the local board or authorities (Gemeindebehörde) must provide a redistribution plan with the necessary instructions for carrying it out. But if the request for redistribution is made as provided for in §54 under b this plan may be presented by the owners instead.

§58

The land of all the owners is to be united in one mass including the public ways which, according to the public plan, are dispensable. From this mass the land is first set aside that is required for public traffic areas and the remainder is distributed among the owners in such a way that every owner receives land of the same proportional value as that which he owned before the redistribution. The city receives public traffic areas in place of the public ways it contributed. In calculating the value of the plots technical experts are to be consulted and all practical and legal factors that influence the value must be taken into consideration.

In place of single building plots or, according to the amount of land in the original property, one or more suitable building lots as near as possible in the former position are to be granted. After the changes have been made in the boundaries built-on lots are, as a rule, to be returned to the former owner.

The land apportioned in the building plan to future streets if it does not find immediate use after the necessary ways have been constructed, is to be redistributed among the different owners as far as possible in such a way that an owners building plot and his share of the future street land lie together.

Unavoidable differences in value between the original and the redistributed territory may be made up for by levying, respectively granting an indemnity in money.

§59

Plots that are too small for building lots are to be, unless those concerned do not voluntarily come to an agreement about them, sold to the town or city which will redistribute them again among the other owners on receipt of the sum that is paid for them.
§60
The building police authorities must confirm with the owners concerned about the proposed redistribution plan and endeavor to reach a mutually agreeable settlement. To those concerned belong also the owners of property outside the redistribution area whose property may be benefited by the redistribution. If an agreement is reached the plan can, without delay, be laid before the Ministry of the Interior for approval. In this case no further proof of public interest need be produced.

§61
If no agreement is reached among all those concerned the redistribution plan must be laid before the Ministry of the Interior for examination in the first instance and after the settlement of any objections made to it must be laid open to public view in the same manner as the building plan. The regulations contained in §§ 21-25 are then to be applied.

§62
The redistribution plan can be elaborated and laid before the Ministry for approval in combination with the building plan. But the carrying out of the redistribution plan presupposes the earlier establishment of the building plan.

§63
With the establishment of the redistribution plan the newly distributed building lot takes the place of the original building lot as regards all legal rights and public legal burdens with the exception of the amounts to be paid in accordance with the act of August 15, 1855, for the construction and maintenance of a drain, and in legal respects receives all the qualities of the latter. Duties and privileges regarding the use of the land remain the same as before except where changed by the redistribution plan. New ones may also be based on this plan.

§64
Properties that change hands in consequence of the redistribution are exempt from the change-of-ownership tax.

§65
If the erection of buildings on a building block would make the practical redistribution of the building plots difficult or impossible all construction may be forbidden. This prohibition ceases however if the redistribution plan is not established within a period of 2 years.
§ 66
Also outside the process of redistribution the building police authorities, in order to make inconsiderable boundary changes, may make the granting of building permits dependent on the builder’s purchasing or relinquishing for compensation small strips of land which are necessary to complete his own or a neighboring building lot.
This is especially the case if, in consequence of the changing of a flush-line, land that formerly belonged to the street is included in the building land.

§ 67
If land must be obtained
a. for widening, straightening or continuing streets, ways or squares that are intended for traffic in the inner city districts
b. for constructing and extending new such streets, ways and squares,
c. for the construction or widening of bridges
d. for embankments and dams
e. for the construction of drains and aqueducts, for their introduction into single pieces of property or their connection with those of neighboring communities
f. for the supplementation or inclusion of unbuilt-on areas in the closed rows of houses,
the necessary property may be expropriated by the building police authorities at the request of the local board with the consent of the Ministry of the Interior, even against the will of the owners concerned.

§ 68
If the pulling down of buildings or groups of buildings is indispensable in the interest of traffic or of public sanitation, or if the building plan for a territory the buildings on which have been destroyed by fire, water or other elementary forces, cannot be carried out otherwise in a way to hinder the recurrence of similar dangers, the Ministry of the Interior is empowered at the request of the local board to grant a permit of expropriation for the whole territory in order that the undertaking may be practically carried out.

§ 69
The request for the expropriation permit must be accompanied by a building plan or, if such a plan does not yet enter into the question, by a special expropriation plan.

§ 70
Before the request is sent to the Ministry of the Interior the building police authorities must endeavor to bring about an amicable agreement among those concerned.

§ 71
After the permit of expropriation has been granted the property owners
concerned may, within a period fixed by the Ministry of the Interior, undertake themselves the new structures on their property provided for in the building or expropriation plan. At the end of this period those building lots or pieces of ground on which structures have not been erected as provided for in the plans, are expropriated.

§72

By local statute the city or town may retain the right of immediate expropriation of areas for public places that are provided for in a building plan that has been established according to the local regulation.

IV

Extract From the Hamburg Law of December 30, 1892

§9

If in carrying out the approved building plan, in order to make possible practical construction on the areas lying between the established streets and squares, it seems necessary to the building deputation to change the boundaries of the building lots in relation to one another and to the street in the plan the process of redistribution may be proceeded with.

The same process takes place if the owners of the larger half of the area in question request it. A special plan is then designed by the building deputation according to which the building plots in question are laid together and redistributed, the public ways and squares that are no longer necessary according to the plan, being done away with, and new lots formed, the boundaries of which if possible should be cut at right angles by the line of the street. After the redistribution every owner receives the same proportional value in land as that which he owned before the redistribution. (There follow regulations respecting the establishment and payment of indemnities).

V

Extract From The Street Law of July 6, 1896

Of The Grand Duchy of Baden

Art.11. Where a building plan is established but suitable construction on the territory it covers is hindered by the position, form or size of the building plots, in order to gain suitable building lots the land may be redistributed by changing the boundaries or position of the lots at the request of the town council, even against the will of the owners concerned, in as far as the redistribution is in the public interest and the street land for this purpose has either been obtained or will be obtained in the process of redistribution.

This process is to be carried out in accordance with the regulations contained in articles 12-18.

Art.12 1. All the properties lying within the territory covered by the redistribution plan—including the superfluous public ways—are combined in one mass.

2. If necessary the land for the streets and squares provided for in the building plan
is first separated from this mass. The area taken from each owner is in proportion to the area that he has contributed to the mass.

3. The remaining area is redistributed among the owners in such a way that each receives a share that corresponds in proportion to the share that he owned before the redistribution.

4. Pieces of land that are too small to be used for building lots if they cannot be combined with other pieces belonging to the same owner and thus building lots formed, must be sold to the city which relinquishes them to be included in the mass.

5. Unavoidable differences in value must be made good by compensation in money. Compensation that is granted to the owners must be paid by the city, compensation for which the owners are responsible is paid to the city. Such money compensation is especially intended to balance the value of the land that is contributed by the city in accordance with §4.

Art. 13.5. On the receipt of the request for redistribution in accordance with §2 the erection of structures on the territory in question may be forbidden by the building police authorities until the whole question of redistribution has been settled.

VI

Extract From The Prussian Law Of July 28, 1902
Relative To The Redistribution of Parcels Of Land
In Frankfurt a. M.

§2

The redistribution can be undertaken only in a single part of the city district (in the redistribution area). The redistribution area must be so bounded that the redistribution can be practically carried out and must not be made larger than is necessary for the purpose; special attention must be given to the character of the territory and to existing streets or those provided for in the building plan....

§3

The redistribution may take place
1. at the request of the magistrate following the decision of the city or
2. at the request of the owners of the property the assessed valuation of which is half the assessed valuation of the whole area, provided that these owners constitute more than half the whole number of owners of the whole area

§4

If following the decision of the city the magistrate is prepared to request the redistribution or after he has received the request made by the owners in accordance
with §3, he must notify the building police authorities of the proposed redistribution. In addition, if none has already been made, he must make out a list or index containing the designations of the properties to be redistributed together with the names of their owners, also stating what percentage of the contributed area is to be given up for public streets and squares and setting the period within which the streets and squares provided for in the building plan are to be completed for traffic and construction. A plan must accompany the report on which the position, size, construction, if any exists, and special use of the plots to be redistributed can be seen. Plan and index must be laid open by the magistrate to public view...

§5

The magistrate must endeavor to bring about an amicable settlement of the objections raised and must then send the request for redistribution together with the written papers bearing on the subject, to the Bezirksausschuss (departmental committee—no English equivalent) without delay. After conferring with the local police authorities about the existence of the preliminary conditions for redistribution mentioned in §§1-4 the Bezirksausschuss decides the question of redistribution and all objections that are still unsettled....

§8

If the legal preliminary conditions for the introduction of the process of redistribution are established the Regierungspräsident orders it to be begun and appoints a commission to carry out the process.

The commission must consist of 2 commissioners of the Regierungspräsident of whom one is president of the commission, the other vice-president and in addition one technical building expert, one jurist qualified as judge, one duly qualified surveyor and one expert for the valuation of the building plots. Members of the magistracy cannot be members of the commission....

§10

The plots that are to be redistributed are to be united in a mass. The existing public ways and squares are also to be included.

From the whole area that required for public ways and squares is to be separated and turned over to the city or to those who are responsible for the maintenance of the ways. This area takes the place of the former ways contributed by the city to the whole mass.

The remainder is to be distributed among the owners.

§12

The distribution according to §10 must be practically and economically carried out and in such a way that each owner receives, as far as possible the same proportion of the area as that that he contributed. The building plots should be laid as far as possible at
right angles to the street and apportioned to the owners in the same approximate position that they held before the redistribution.

§13

The owners are to be compensated in money for the land required for streets and squares over and above the area that was contributed by the city if this area required exceeds 30% of the area contributed by the owners. The compensation is to be reckoned as a fraction of the whole value of the area required for streets and squares.

§17

Pieces of land that are too small for building lots are to be combined if they belong to the same owner. If they belong to different owners they are, with the consent of the owners, to be so combined, that suitable building lots are formed which are then held in common by the several owners each owner being apprised of the amount of his share...

VII

Extract From The Law of July 27, 1895 Of Basel Pertaining To Superstructures

§52

If a property owner within a distance of 13m from the building line of an unbuilt-on neighboring boundary which does not lie at right angles to the building-line wishes to erect a new structure a boundary as far as possible at right angles to the building line shall be formed if and in as far as this can be done without great disadvantage to the two neighbors. If the building police cannot succeed in bringing about an amicable settlement between the two neighbors the Regierungsrat (council) may of its own accord provide for the establishment of a suitable boundary line. As regards the indemnity which one neighbor may have to pay the other a valuation commission decides the appointment and duties of which are provided for in the act of June 15, 1837, pertaining to the relinquishing of property for general use.

The above regulations do not apply outside the city limits.

VIII

Extract from The Belgian Law of July 1, 1858 And November 15, 1867 Pertaining To The Expropriation Of Zones (in French)

see original at : www.archive.org.
Ministerial Decrees, Police Regulations And Local Statutes

IX
Decree Of The Ministry of The Interior of the Grand Duchy Of Hessen, Relative to The Establishment Of Local Building Plans Of December 28, 1898

In the local building plans that have recently been drawn up and laid before us for approval, in the effort to provide for the carrying out of straight-lined courses too little attention has as a rule been paid to present conditions, existing ways, the direction of the building plots and boundaries. Thereby not only the usefulness of the plots is frequently affected and the interests of the owners injured, but the laying out of pattern-like, straight-lined streets in which too little consideration is given to the esthetic effect of the construction, leads to uniform and monotonous street views, whereas efforts should be directed towards creating a certain variety in the street scenes as far as this is compatible with the requirements of servicableness.

Moreover it has proved to be disadvantageous that the plans are frequently made by surveyors without the aid of building experts; the former should be entrusted only with the situation plan including the altitude figures; the projection and drawing in of the street flush-lines on the contrary should be left exclusively to architectural experts.

Local building plans that are made in this way are not as a rule laid before us until they have already been made public and the owners involved have assumed a definite attitude in regard to them. If we than propose alterations in the street or building flush-lines such proposals often cause dissatisfaction among those concerned, apart from the fact, that such changes necessitate a second decision on the part of the local board and the repetition of the process of publication etc. which entails the loss of much time and work. It is therefore advisable when the first draught of the building plan is made, before it is laid before the city or town council and made public to give adequate consideration to the above named points and this should be done with the assistance of the local technical authorities and of the ministerial department of building.

You will therefore notify in a suitable manner the municipal authorities of the towns of the Grand Duchy that wherever the need occurs for a new building plan or for the alteration or extension of an existing one, it will aid in avoiding delays entailed by the subsequent alteration of the plan if the first draught of the plan accompanied by a surveyor’s situation plan containing no flush-line project, is sent to the Kreisamt (district office - no English equivalent) so that the Grand Ducal district building inspector may add the main points of the street projects based on the wishes of the town. The project must then be laid before the Ministerial Building Department for approval. In suitable cases a personal conference with the inspector is advised. Not until this process has been carried out should the plans be laid before the council for acceptance be published and finally laid before us for definite approval.

In cities and in those townships which have suitable building experts or are
willing to engage them for the purpose in question the project should, as a rule, be undertaken by these building experts. But also in such cases the projected plan should be brought to the notice of the council before it is presented for acceptance so that the council may lay it before us.

X

Instructions Of The Royal Bavarian Ministry Of The Interior To The Government And Municipal Authorities, Relative to The Making Of Building Line Plans, Of July 18, 1905

In accordance with §3 of the building law of February 17, 1901 when new building lines are established or existing ones changed, streets and ways are laid out with a width insuring the safety and convenience of traffic and, as far as possible, straight. In establishing the building lines the demands of traffic, sanitary housing conditions and esthetic considerations must be regarded, local needs and conditions must be determinative in meeting these demands. Hence the width of the street and the street direction must be determined from case to case to correspond to the variation in the amount of public traffic, the need for dwelling houses and the requirements of industrial development.

Experience shows however that in carrying out the provisions of the law the emphasis is always laid on the “straightness” of the street and that without regard for existing conditions this is required everywhere where nature itself does not put an end to the rule of the compass. Such a treatment of the matter by no means corresponds to the intentions of the law, is entirely uneconomical and leads to unnecessary and therefore unjustified interference with property.

To the pattern-like arrangement of perfectly straight streets of unvarying width, the exclusively rectangular scheme and the often unnecessary beveled corners land and property are frequently quite senselessly sacrificed and well-built houses cut into. It is also often forgotten that the lines are not only street flush-lines but also building flush-lines and that the serviceableness of the adjoining properties as well as practical and pleasing construction should be taken into account.

Owing to their lack of technical knowledge those concerned are not usually conscious of the detriment done to their property until, when buildings are erected difficulties arise connected with the flush-lines that were not objected to at the time of their establishment, hence at a time when alterations are no longer possible. In short, the present practice frequently incurs expense to the town and to property owners which might easily be spared with a little forethought.

Experience also shows that these mistaken measures unnecessarily destroy beautiful street views, greatly detract from the landscape and impress on places where construction is much developed an inexpressibly bare and monotonous stamp.

It is therefore advisable to impress upon towns and all authorities who are entrusted with the granting of building line plans what important economic and esthetic significance is involved in the establishment of flush-lines and to how great an extent
the public welfare depends upon well-thought out plans. It must be pointed out that the infinite variety of needs imperatively demands that we break with old geometrical street scheme and employ as much freedom as possible. Proper consideration must be given to property and boundary conditions, to the shape and serviceableness of the building blocks, to the growing need of sanitary houses, the development of industrial life, to traffic and the proportions that it will probably assume in the future especially at street crossings, bridge ends, railway station squares and such places. Further, attention must be paid to the natural character of the land, the surrounding landscape, characteristic differences in level, water courses, trees, to the climate, winds, sunniness, distant view, to the protection of attractive parts of streets and squares, to the closed (framed) appearance of the views in the streets and squares, to the customary style of architecture, to monumental or otherwise interesting buildings, to future needs in the way of public buildings, green places of recreation, playgrounds with seats, fountains and such like.

It is also advisable to mark in the plans those structures, views etc, that should receive special consideration in determining the lines.

If all these considerations receive due attention it must follow that curved streets, breaks and irregularities in the building lines are everywhere admissible where local needs and desirable variety demand them and that narrow streets for special purposes, as for instance, in quiet residential districts with low houses, have their advantages, that instead of the customary average street width we must have, especially in large cities, a large number of graduated width from the extremely broad main traffic streets to the quite narrow residential streets, in short, that every street and part of a street must be adapted to the traffic that is expected to pass through it. Hence the main lines of travel must be correctly foreseen, the important traffic centres properly connected and the width of the streets be determined by the needs of the future. Broad front garden plots may be laid out when traffic is expected to increase in the future and yet until such time the street will bear a residential character.

By carefully considering and properly applying the principles of city building and by working always with a view to the needs of the future we shall succeed in providing for the development of business traffic by laying out wide traffic streets and in providing for the inhabitants healthy residential sections removed from the noise and dust of the centre of the city. This will be the case especially when at the same time as the flush-line plans the system of construction is established, variety in the heights of the buildings and the distances of the buildings from one another provided for and where detached building is used permission is given in certain cases to place the house well back from the street in the garden.

But if the building flush-lines and the architecture correspond to the various practical needs so that the whole town bears the character of serviceableness, the development of the towns will be various and charming and to this extent practical and sanitary development in a town is the basis of beautiful views in the streets and squares.

Finally it should be emphasized that flush-lines should be drawn only where they are needed and that it is not proper to provide small places where building activity is at a
standstill with detailed flush-line plans.

If in the foregoing several of the principles of city building have been touched upon as they are taught by the masters of this art, the intention is by no means to give instructions as to how streets are to be laid out; the art of city building cannot be compressed into formulas; natural feeling must decide. The intention was only to point out the great importance of these questions not only for the town but for the individual and to make clear that the tasks set by city building can be successfully accomplished only by those who are trained in this work, by technical experts who have not only special technical training in laying out streets and the advantageous use of the land but who also have insight into and understanding of the needs and development of local traffic, of business life and industry. Towns as a rule do not possess the services of such well trained and experienced experts. It is however practically impossible for persons at a distance to judge of the plans for the most important preliminary condition for this success of a plan is that it should be made on the spot, the only place where the real needs of the town and the inhabitants can be judged.

In view of the importance of the matter towns, both great and small, are therefore urgently advised whenever they stand in need of extensive or in any way important flush-line plans to call to their aid a trained architect and if necessary also engineers as has lately been done by the towns of Pfersee, Lechhausen, Friedberg and Memmingen.

It also seems very urgent just now, when there is little activity in building, to subject the older flush-line plans to a complete revision.

The costs involved in the employment of technical experts are more than outweighed by economy in other directions and by the case with which the plans when once established can be carried out.

The Bavarian “Verein für Volkskunst und Volkskunde” in Munich (Heustr. 18) and the Bavarian “Architekten- und Ingenieur-Verein” in Munich with its eight branches, have offered to assist the various towns and authorities if desired and to name experts who are familiar with the technical and economic problems of city building and who are also prepared, in view of the necessity of having the plans made in the towns where they are to be used, to make such plans or to assist in their making.

Building line projects that have been made in this way are to be laid before the Ministry of Interior for examination.

The Royal Governments, Kammern des Inneren (chamberlains of the Interior) and the district administrative authorities must see that these regulations are carried out.

XI

Police Ordinances And Local Statutes
Of Berlin of 1875, 1877, 1879
a. Police Ordinance of September 12, 1879
§1

A street or part of a street is to be regarded as ready for public traffic and for construction when the following conditions are fulfilled:
I. For Streets that are laid out after this ordinance is issued:
1. The area necessary for the street and lying between the street flush-lines must have been made over to the city.
2. The street must agree with the building plan of Berlin and its vicinity as regards
   a. position in the plan
   b. level
   c. width and division of width
3. The roadway must be covered with paving (stone, wood, iron, asphalt etc)
   In stone paving the stones used must be rectangular and must be at least two thirds as large at the bottom as they are at the top; also they must not vary in breadth and height more than 1 cm. The pavement must be laid on a gravel foundation of at least 20 cm.
4. The street must be provided with drains connecting with an existing public drain according to the plan of construction.
5. The street must be joined to an already regulated street by means of a roadway crossing
6. The footways must be made according to the building police regulations of April 21, 1853 and January 17, 1873

II. In existing streets the whole surface of the street between the street flush-lines must be paved across its entire width, as footway and roadway, with stone, asphalt or macadam and there must be underground drainage canals or paved gutters connecting with a public drain in accordance with the building plan.

§2

Streets or parts of streets that are maintained only as roads cannot be regarded as ready for construction,

§7

Whether or not the foregoing conditions are fulfilled is subject to the joint decision of the royal “Polizeipräsidium” (no English equivalent) and the Police Administration of Street Construction.

b. Local Statute I Of October 8, 1875

§1

Dwellings may be erected on streets or parts of streets on which they have an entrance only if these streets or parts of streets are paved according to the police regulations, are drained and are accessible by means of at least one regulated street.

§2

Exceptions in individual cases with consideration of the extent, purpose, local position etc of the intended structures, may be made by the municipal building
c. Local Statute II Of March 7, 1877 (Extract)
The Laying Out Of New Streets By The City

§1
If the city lays out a new or extends an already existing street which is intended to be built-on, the owners of the adjoining properties, as soon as buildings are erected on the latter must pay to the city the cost of clearing, constructing, paving and draining the street.

§2
In the cost of clearing is included also the cost of the land for the street including the footways.

If part of the land for the street has been contributed without compensation by the adjoining properties, in order to determine the share of each owner in the purchase cost the value of the contributed land is reckoned with consideration of the price paid for the purchased land and this is subtracted from the share that those owners have to pay who contributed the land.

§3
The costs of construction and paving include also the cost of connections with side streets and of foot and carriage bridges.

As the cost of the material used in paving including wages a fixed price per square meter is set annually by municipal decision. This should be different for main and side streets and should not exceed the price of the poorest quality of pavement admissible in such streets according to municipal decision.

The magistracy decided whether a street is to be regarded as a main or side street.

The cost of constructing promenades and of trees and other vegetation is not to be paid.

§4
In dividing the entire costs that part of the street that was regulated at one time is to be considered as a unit.

§5
In streets of more than 26m in width only the cost of 26m width is to be paid by the abuttors; the remainder is paid by the city.
Construction and Maintenance of New Streets, That are Established in the Building Plan, by Promoters or Abuttors

§9
If promoters or abuttors wish to lay out a street or part of a street that is established in the building plan, the consent of the Magistracy is necessary as well as that of the building police.

A situation plan and a nivellement plan must be made showing clearly especially the connection of the drains with the public drainage system, and five copies of each of these plans must be presented.

For these plans the experts employed by the abuttors may make use at cost of the materials at the magistracy as far as this is compatible with the interests of the administration.

The situation plan must show the building plots in the street up to a distance of 30m from the street flush-lines and must contain the designations by which they are entered in the register of landed property and the names of the owners.

The permit can be refused only if reasons connected with the public interest oppose the street.

The reasons must be given in the notification of refusal.

§10
If the promotors or abuttors declare themselves prepared to undertake the construction of the street or if they actually begin it they are obliged to complete it within the period fixed by the permit, otherwise the necessary work may be carried out by the city at the expense of the promotors or abuttors. The land necessary for the street is to be made over to the city without encumbrance before the construction of the street is begun.

§16
A new street in this sense includes also the turning of an unregulated way or a country road into a city street.

(Approved by the Minister of the Interior March, 19, 1877)

Note: A new form of this statute is at present before the Minister for approval.

XII
Extract From The Building Law
For The City Of Cologne
Of June 1, 1901
Relation of the structures to the streets.

§3 Structures on unfinished streets
2.Streets and parts of streets, existing ways as well as those to be newly laid out, are ready for public traffic and for construction if they:
a.are made over to the city from the point where construction is to begin up to an
already finished street and are paved in a manner suitable for city traffic and are
provided with footways,
b. are provided with proper underground drains and
c. are sufficiently lighted in the way that is customary in that locality
(In certain suburban districts the requirements are not as strict)

Admissable Construction on the Building Plots.

§11 Distance between the Buildings

4. On the building plots of class IV (detached construction) the buildings must
be at least 5m from the neighboring boundary and 10m from the neighboring buildings.
On the street however two houses may be built directly against one another if each one
observes the prescribed distances in other respects and the frontage of the two buildings
together is not more than 30m. In the Ossendorfer district of class IB the measurements
are 3.50m, 7m and 30m.

6. In the prescribed spaces the following structures may be erected:
a. low structures in front of less than 2m in height under the condition that they
do not extend more than 1.75m in front of the building.
b. structures up the front of the building under the condition that they do not
project more than 1m from the front of the building nor cover more than 2/5 of
the length and 1/3 of the surface of the front of the building;
c. open glass roofs covering not more than 6sqm;
d. in the rear, at least 20m from the street flush-line outbuildings may be erected
such as one story stables and sheds, greenhouses etc with at the most two sides
directly on the boundary, if between such buildings and the opposite boundary or
the other buildings on the property a space of at least 5m remains and the
character of detached construction is retained.

XIII
Extract From The Local Statute of March 13, 1890
Pertaining To Construction In The City District Of Cologne
with changes of April 10, 1894 and October 24, 1900
Construction on New or on already Existing but as yet Unbuilt on Streets and Parts of
Streets

1. Obligations of the Property owners

§1

If after November 21, 1878, the day on which the former local statute pertaining
the construction in Old Cologne went into effect, a building is erected on a new,
extended or existing street hitherto unbuilt on, or on a part of such a street, the owner is
obliged to bear a share of the cost of clearing, constructing, draining and illuminating the
street and of the cost of maintenance during the first 5 years.

If only certain of the above processes are carried out (for instance clearing,
constructing, drainage, illumination) the cost of these various processes may be paid for
§2
The cost of clearing includes also the purchase cost of the land.

If a part of the street land has been given by the owners of adjoining properties or purchased from them at a low price, in fixing the share of the purchase cost of the whole street land for which each owner is responsible the value of the land that was given or sold to the city at a low price is included in the calculation of the cost of the whole land and is deducted from the shares of those owners who contributed the land at their request. The value of land belonging to the city and used for public ways is not included in the calculation.

The value of the land contributed or sold to the city at a low price is determined by three technical experts appointed from case to case by the town or city council.

§3
In the costs mentioned in §1 are included especially:
1. The cost of earth works, making and paving the roadway and the footways in the manner determined by the city council, the cost of proper connections with other streets and the cost of covering the drains.
   As a rule the pavement of the roadway should consist of the best paving material customarily used in the locality (stone, wood or asphalt) that of the footways of flat-topped, smooth, square stones of the same size or of asphalt;
   2. The cost of the sewers with their connections with the clarifying stations.

2. Distribution of the Costs among those responsible for them

§4
In distributing the cost of construction and maintenance, with the exception of the cost of the sewers, each street in its whole length or each part of a street fixed by the city council, including the street crossings is regarded as a unit. The amount for which each piece of property is assessed is determined by the length of its street frontage.

The assessment for the sewers on the contrary is on the basis of a fixed sum per meter of frontage which sum must not exceed the amount obtained if the entire cost of the street sewer system, the rain gutters the pipes to the clarifying station, the connections with the houses, as far as these are made by the city, is divided by the number of meters of street frontage that can be built on,

Corner properties pay their corresponding shares on each street on which they lie.

§5
If the width of a street exceeds 26m the abuttor’s share of the cost is limited to the cost of 13m width.
3. Time at which the Payments are due and their Collection

§6
Payment of the taxes, provided for in §§1-5 must be made as soon as buildings are erected on the street or part of the street and after all or some of the works of construction have been carried out.

§7
The sums for which the owners are responsible bear the character of public municipal taxes.
The collection of the sums takes place by the Verwaltungszwangsverfahren (untranslatable - the process employed by the administration to compel payment)

The Laying out of New Streets by Promoters

§8
Permission to lay out new streets is granted to promoters only if the construction of such streets is not opposed to the public interest. The definite obligations of such promoters are fixed by written contracts. In all cases the promoter must make over to the city the land required for the street and must fulfill the obligations described in §§1-4.

§9
In single cases the city council may decide that the work of constructing a street is not to be left to the promoter but is to be carried out wholly or in part by the city building department at the expense of the promoter. The sewer construction is carried out by the city in all cases and charged to the promoter in accordance with §4.

Construction on Unfinished Streets and Parts of Streets.

§10
On streets or parts of streets that are not yet ready for public traffic and for construction according to the regulations of the building police, the erection of dwellings with entrances on such a street can be permitted only in exceptional cases by the council with the consent of the police authorities.
(There follow regulations limiting these requirements in the case of construction in the suburbs).

XIV
Extract From The Building Law Of The City Of Posen
March 31, 1903
§29
Front Gardens; Front and Rear Projections into them.
Sec4. The following regulations apply to projections in front gardens:
a. Low front structures up to 1.25m height from the ground, such as approaches, steps, terraces, may extend to the middle between the building and the street flush lines.

b. Front structures that extend up the front of the house such as portals, projecting roofs, bay windows, balconies, verandahs, may project over 1/3 of the space between the building and street flush lines but not more than 2m. Their entire width must not amount to more than 2/5 of the front of the building not including porches and balconies.

c. The portions of the building mentioned under a and b must be removed 11/2 times the extent of their projection from the neighboring boundary unless the front projections of the neighboring houses are built directly against one another.

§78
Rear Building Line.

Sec.1. In the districts of the building classes IIb, IIIb and IVb the city building police authorities will, with the consent of the council, designate the building blocks on which construction may be carried out only up to a parallel line along the rear (rear building line). The area that is thus kept open in the inside of the blocks, behind the rear building line must not exceed 1/4 of the area of the whole block.

Sec 2. Behind this rear building line only such structures as those named in §§29 sec. 4 under a and b may project and of these the low structures may project 5m, the ascending structure 2m.

Sec 3. In addition arbors, garden houses and other one story structures covering not more than 20 sqm may be erected in the inside of the blocks.

§79
Detached and Semi-detached Construction, Yield.

Sec.1. Detached Construction a. In the districts of the building classes IIIa and IVa every front building and every rear building of more than one story must stand the width of the so called “yield” from the neighboring boundary at least on one side.

b. On the other side the buildings mentioned may be erected directly on the boundary provided the neighbor consents and contracts with the city building police authorities to build up to this same boundary within a stated period.

Sec 2. A pair of buildings erected thus must not have a frontage of more than 35m and corner buildings must not have a frontage of more than 45m measured round the corner.

Sec 3. If the conditions of 1b and 2 are not fulfilled every front building and every rear building of more than one story must observe the “yield” on both sides.

Sec 4. In sections 1 to 3 in the building class IVa the yield is at least 2m+1/15 of the depth of the building, in building class IIIa it is at least 3m+1/15 of the depth of the building. Under the latter the distance of the back of the rearmost part of the building
from the building flush-line is to be understood.

Sec.5 Group Building. Connecting houses in groups of three, four or five houses are admissible under the condition that the frontage of each of the two end buildings does not exceed 15m and that the middle houses at least that are not free on either side, are one-family houses. In this case the yield in building class IVa is 3m, 4m, or 5m respectively +1/10 of the depth of the building, in building class IIIa it is 1m more.

Sec.6 Half-open construction. The whole side of a block or two opposite sides of a block may also be built up in closed rows if in the inside of the block there is a connecting open space at least 20m wide which has an opening on both the other sides of the block, such opening to be formed by two yields and at least 20m.

Sec.7. In the yield( see §29, sec. 4a and b) low structures may project 1.50m, ascending structures 0.50m, the latter however may not cover more than 1/5 of the side of the building.

Sec.8 Where there is a bare boundary wall on the neighboring boundary the yield may be dispensed with.

Sec.9. The buildings may extend as far as is desired behind the building flush-line; they need not stand parallel to it. Bare side walls should however be avoided.

Sec.10. Arbors, garden houses, stables, carriage sheds and other one story structures not connected with the front building may be erected directly on the boundary. Arbors and garden houses are also permitted in the open space provided for in sec. 6.

XV

Extract From The Building Law Of Vienna Of January 17, 1883

§3

In dividing a piece of ground into building lots, before a building permit for the separate buildings is applied for the approval of the authorities that grant such permits must be obtained.

This division of the ground is either:
a. an allotment, if the opening of new streets leading across the ground or bordering it, or the extension of existing streets, lanes or squares is proposed, or
b. a subdivision, if a piece of land lying on existing streets, lanes or a square is divided into several building lots without causing the opening of new or the extension of existing streets, lanes or squares.

§5

In examining the plans for the division of the ground the building authorities must see that the building lots are of the proper size and shape to permit the erection on them of buildings that conform to the requirements as regards light and air.

§7

The permission to divide the land becomes ineffective if, within 3 years from the date it is granted construction is not begun on the divided building lots or if, during this
period the necessary entries have not been made in the register of landed property.

C.

Resolutions of Societies

XVI

Fundamental Points In City Extensions In Technical and Economic Respects And In Their Relation To Police Regulations.

Resolved at the meeting of the “Verband Deutscher Architekten-und Ingenieur-Vereine” in Berlin, Sept.25, 1874.

1.

The projection of city extensions consists mainly in establishing the fundamental directions of all the means of traffic streets, horse railways, steam railways, canals, which are to be treated systematically and therefore over an extensive area.

2.

The street system should contain at first only the main lines, existing ways being considered as far as possible and those side lines that owing to local conditions, are to be retained. The subordinate division is to be undertaken according to the need from time to time or is to be left to private enterprise.

3.

The grouping of different kinds of city districts should be determined by the situation and other characteristics, it should be forced only by sanitary regulations relating to trade.

4.

It is the duty of the building police to protect the interests of the tenants of the houses, the neighbors and the whole community. Such interests are: security from fire, traffic freedom, health. As against these considerations all esthetic regulations are to be rejected.

5.

It is desirable for city extensions that the expropriation and inpropriation of remnants of land be legally facilitated. Still more important would be the enactment of a law facilitating the redistribution of building plots with the object of cutting through streets and regulating the forms of the building lots.

6.

The city has the right of collecting from property owners a sum sufficient to cover the cost of street construction. Under the corresponding financial forms it is advisable, especially when the process of regulation has been carried out, that an average amount per
121

meter of property frontage be fixed.

7.

The conditions of property holding which are formed when a city extension plan is established, the obligations of the abuttors on the one hand and of the municipality on the other, require legal regulation. On land which is intended for future streets and squares construction should not be permitted or only temporary structures should be erected after the plan has once been legally established. The owner has no right to claim an indemnity for this restriction, he has however the right to demand that land lying in future squares be purchased as soon as the surrounding streets are constructed. The owner of single, scattered new structures must, in the first instance provide for their accessibility and drainage. but the city should undertake to complete and maintain a new street as soon as it is certain buildings will be erected on a certain part of all the plots fronting on it.

(Referent: R. Baumeister)

XVII

Principles Of City Extension Especially In Respect To Hygiene.

Resolved by the “Deutscher Verein für öffentliche Gesundheitspflege” at the meeting in Freiburg i.B. Sept. 15, 1885.

1. Plan

a. Every growing city requires, for its extension towards the outside and for its improvement a uniform comprehensive city building plan which must be made with due attention to suitable streets widths, practical placing of the streets, open spaces, means of traffic, planted areas (rows of trees, front gardens, squares) public gardens, a situation with proper drainage conditions, keeping the natural water courses clean, suitable size of the building lots, sites for public buildings and other municipal institutions.

b. As a rule it is necessary to establish and make public only the main streets and according to the need those subdivisions which it is expected will be built on the near future.

2. Execution

a. Streets should be provided with water and drains and measures taken to ensure the keeping clean of the natural water courses before construction on the building is begun.

d. The use of decaying material or material that may decay for filling in streets and lots is to be avoided. When construction reaches the areas that have formerly been used as dumps these are to be cleaned if the material on them has not already lost its objectionable character.

e. The city extensions should be as connected in character as possible.

3. Police, Statutary and Legal Regulations.

f. Police regulation must enforce the observance of all hygienic requirements when new houses are built and old ones altered; consideration should be given in this respect to
the resolutions of the German Society for Public Sanitation passed at the meeting of the society in Munich 1875, relative to new structures in new quarters of large cities.

g. Municipalities should be legally empowered:
   aa. to refuse permits for structures that do not accord with the building plan of the city extension, without granting an indemnity
   bb. to expropriate the land necessary to carry out the building plan including building plot remnants;
   cc. to compel abutters to pay the costs of street construction up to a certain width
   dd. to forbid the carrying on of certain objectionable trades in certain districts of the city;
   ee. to require the connection of all built-on properties with the drainage and water supply systems;
   ff. to alter or rebuild unhealthy city districts by using the right of expropriation, without incurring disproportionate costs;
   gg. to require front garden plots in a street, also to require open or closed construction allowing however the property owners a voice in the matter

h. Finally the right of inpropriation of parts of building plots that are not suitable for building on and the right of redistribution should be legally granted to those interested.

4.

1. It is urgently desirable that the hygienic-technical questions of city extension should be more fully treated at our universities and technical institutes than is now the case and that they should be made the subject of whole courses of instruction.

(Referenten: Stübben and Becker)

XVIII
Draught Of Legal Regulations To Ensure Sanitary Dwellings.
Approved at the meeting of the “Deutscher Verein für öffentliche Gesundheitspflege “in Strassburg, September 14, 1889

I. Streets and Building Lots

§1

1. The construction widening or alteration of a street may only be carried out in accordance with the building plan established by the responsible authorities.

2. In establishing a building plan for a city or town district a suitable portion of the whole area must be reserved for streets, squares or public gardens.

3. The building plan may require that in certain streets or parts of streets the building flush-line be set back from the street flush-line (front garden plots), and that a certain space be left open at the side between the buildings (detached construction).

4. For filling in streets and building lots only such material may be used as contains nothing unsanitary
II. New Construction of Buildings

§2
1. The height of a building on a street must not be greater than the distance of the building from the opposite building flush-line.
2. The greatest admissible height of the walls next the courts or yards, that are provided with windows according to §7, is one and a half times the distance from the opposite boundary of the unbuilt-on space.
3. The average width of a yard or court on which windows look must not be less than 4m.
4. The combination of the yards of neighboring properties for the purpose of gaining the required space or minimum width is admissible if the yards are kept free from buildings.
5. Every part of a piece of property remaining unbuilt-on must have an entrance of at least 1m in width and 2m in height in order that it can be kept clean.

§3
1. In case of rebuilding on building lots that were formerly more densely built up than the regulations in §2 allow the following regulations apply:
   The height of a building on the street may be one and a half times the distance to the opposite building flush-line and on the yards or courts three times the width of the court.
   The width of the court may be reduced to 2.50m.
2. In applying these regulations however under no circumstances may more unfavorable conditions of light and air be produced than the former ones.

§4
A new building may not be erected until a proper supply of drinking water and proper sewerage has been provided for.

§5
1. The number of necessary water closets in a building is determined by the number of persons who regularly use the building. As a rule each dwelling must have a separate, enclosed, covered water closer that can be locked.
2. In order to ensure proper ventilation every water closet must have a window opening directly into the open air.
3. The water closet pipes must be made of impenetrable material and as a rule must be continued out over the roof as an air pipe.
4. The floors and ceilings of stables and the walls dividing from dwelling rooms must be impermeable.
5. The same applies to the floors, ceilings and division walls of those localities used for trades or business that may be injurious to health.
6. The use of unsanitary material for filling the floors and ceilings is forbidden.
III. New Construction of Localities in which persons will remain for Longer Periods of Time

§6
1. Localities in which people remain for longer periods of time must be at least 2.50m high.
2. Dwellings are not permissible above the fourth story, that is the fourth story above the ground floor.

§7
1. All localities used by people for longer periods must have windows opening directly into the open air. This rule need not be strictly enforced if sufficient light and air are provided for in some other way.
2. In every such locality the window area must be at least 1/12 the floor area. Deviations from this rule are admissable in places of business and attic rooms.

§8
1. The floor of every room must be above the level of high water.
2. The floors and walls of all localities used by people for longer periods must be protected against dampness from the ground.
3. Dwellings in cellars, that is where the floors are below the surface of the earth are inadmissable.
4. Localities in which people remain for longer periods, especially living rooms may be in cellars only if the floor is at the most 1m below the surface of the ground and the lintel of the window at least 1m above it.- Exceptions are admissable if the use to which the rooms are put requires that they be deeper.

IV. Use of Localities in which People remain for longer Periods.

§9
1. All localities in which people remain for longer periods may be used for this purpose only after a proper permit has been secured.
2. This permit should not be issued for new and altered buildings if the localities in question are not sufficiently dry.

§10
1. Localities the windows of which do not meet the requirements of §7 may not be used as living rooms.
2. Rooms that are let as sleeping rooms must contain for every child under 10 years at least 5 cbm of air, for every older person at least 10cbm. In lodging rooms where exceptions are permitted according to §7, if the rooms are used as sleeping rooms, the
window area must be at least 1qm for every child under 10 years, 0.2qm for every older person. Children under one year are not included.

3. These rules do not go into effect for existing buildings till after the lapse of 5 years but may be made effective after 2 years by every change of dwelling.

4. Suitable notice to vacate the observance of which if necessary be enforced by penalty, should be fixed by the responsible authorities.

§11

1. Localities that do not conform to the foregoing regulations or are unsanitary for some other reasons should be declared unfit for longer use by people.

2. If for these reasons whole groups of houses or city districts are condemned as unfit for use the city has the right to undertake or to cause to be undertaken their complete reconstruction. For this purpose it is empowered to expropriate all the land and buildings within the district to be reconstructed. The process of expropriation is to be carried out in accordance with the laws of the land.

The provisions of this law are regarded as minimum requirements and do not exclude further national, provincial and local legislation.

Regulations pertaining to the carrying out of this law are to be issued by the state authorities.

The enforcement of this law is the duty of all the building police and sanitary police authorities unless other provision is made by state legislation.

(Referenten: Miquel and Baumeister)

XIX Recommendations Of The “Deutscher Verein Für Öffentliche Gesundheitspflege” Pertaining To The Different Treatment Of The Building Regulation In The Inner And Outlying Districts Of The City And In Its Environs. Meeting in Würzburg in May 1893.

1. Owing to the rapid growth of the population in German cities, especially in the larger ones, and the extreme importance of good housing conditions for social development, practical construction of new city districts is becoming a vital matter.

2. The building police regulations for older districts of the city, because of the necessity for considering existing conditions in such districts, cannot naturally be suitable for application in the new districts which consist mainly of fields or unfinished building areas and a few sparcely built up properties.

3. In nearly all cities the old town and the new districts receive the same treatment
with the result that too great density of population is not hindered and, as the extent to
which the building regulations permit land to be used, is an important factor in fixing
its price, an unhealthy rise in the price of land has taken place which makes it very
difficult to introduce airy, open construction in the new building quarters. Moreover
the application to new districts of regulations intended for the old district prevent the
necessary divisions in the new parts (large and small dwellings, factories and smaller
industrial plants).

4. The special regulations that exist in some places in respect to
   a. densely built up older districts,
   b. properties on unregulated streets without sewers,
   c. built-on lots in contrast to vacant ones,
   d. factory districts,
   e. districts with detached construction,
are not sufficient to ensure good housing conditions in the new districts especially for the
poorer classes, on the contrary comprehensive and uniform special regulations for new
districts are required so that healthy housing conditions for all classes of the population
may be brought about and the demands of the definitely limited districts (residential,
factory, mixed quarters) met.

5. In particular, energetic measures are necessary to prevent permanently the too
great use of the building plots, limiting the height of the buildings and providing for
sufficient yard space and in some instances for free space between the buildings (yield).
The amount of space to be left unbuilt-on should be made dependent on the number and
character of the dwellings on the building plot, the front garden plots and also parts of
wider streets being taken into consideration under some conditions.

6. The different degrees of density of construction can only be ensured by
establishing fixed limits between definite zones and special regulations applying to
properties already built on.

7. Rational treatment of the regulations relative to fire-proofing would make
graduation of such regulations for the different districts unnecessary.

8. Of practical use are differences in the width and paving of the streets in the
treatment of front spaces and in the construction of different small structures against and
in front of the houses. Regulations pertaining to these matters however should not be for
whole districts but in accordance with the character of certain single streets and blocks.

9.
Under new districts in this sense is to be understood not only the land actually within the city limits but also those environs that within a calculable time may become incorporated in the city and these should be subject to building regulations to which end the cooperation of all the authorities concerned should be striven for.

10.
Besides police regulations private restrictions imposed at the time of sale are very desirable as they tend to make the character of certain streets and blocks individual by going farther than the municipal regulations would be justified in doing (exclusion of flathouses, restaurants etc).

11.
The special regulations here recommended should be introduced by law or local statute. National legislation would indeed facilitate the enforcement of certain regulations pertaining to factory districts etc. but is by no means necessary before such special regulations can be introduced by the police ordinances.

(Referenten: Adickes and Baumeister)

XX
Recommendations Of The “Deutscher Verein Für Öffentliche Gesundheitspflege” Relative To Open Construction.
Meeting in Magdeburg in September 1894.

1. The custom of dense crowding together of the population in many of the large cities in Germany, in contrast to other countries, especially England, endangers health, injures family life and makes the purchase of land impossible for the majority of the inhabitants.

2. This condition with the high rents that result is mainly due to the increasing speculation in land and buildings which makes open construction difficult and often impossible.

3. The restriction of this speculation and the introduction of more open construction as well as the removal of all obstacles to this end must hence be recognized as an urgent need.

4. These obstacles are of two kinds, legislative and constructive. the latter in addition to traffic problems are:
   a. The establishment in the building plans of too deep building blocks which favor the erection of court and rear dwellings.
   b. Too great width in the streets intended merely to sub-divide the building land resulting in too great an expense to the abutters.
   c. The disproportionately high cost of street construction and drainage frequently
reckoned without any consideration of the number of stories and dwellings and only according to the street frontage.

d. The unnecessary application to smaller houses of police regulations intended for large buildings with many stories.

e. The increased price of land in the city extension districts partly due to the building police regulations which have hitherto allowed as great use to be made of land in such sections as in the inner districts.

f. The lack of regulations for the protection of small dwelling houses against the disadvantageous arising from the erection of high and deep buildings on neighboring properties.

5. For the removal of these obstacles the following measures are recommended:

a. To remedy the too great use of the land the blocks in residential sections should be made of such a depth that the erection of front buildings only is encouraged.

b. Streets intended merely to subdivide the building land, without much traffic, should be limited in width.

It is very desirable to set the building line back from the street line so that front garden plots, lawns and trees are made possible.

c. The pavement used in the streets under b should be as simple and cheap as possible.

In reckoning the cost to the abutters of street construction, paving and drainage the use to which the land is put should be taken into consideration as far as possible.

d. Building police requirement as regards the number and construction of staircases etc. should be more moderate for buildings with fewer stories than for large buildings.

e. Wherever the price of land and existing buildings still permit of it police regulations should be made as soon as possible restricting the use of the land and the height of the buildings so that these sections may not also become objects of speculation and sites for barrack-like flat-houses, but that on the contrary the erection of houses with only few dwellings is encouraged and permanently protected.

(Referenten: Adickes, Hinckeldeyn and Classen)

XXI
Recommendations Of The “Deutscher Verein Für Öffentliche Gesundheitspflege” Relative to Measures To Bring About The Healthy and Practical Development Of Cities.
Meeting in Strassburg in September 1895

Among the measures that serve to make construction in city extension districts healthy and practical and tend to improve unsanitary conditions in the inner districts are:

I. The establishment of a building plan that corresponds to the demands of sanitation (on the basis of a suitable flush-line law);
II. The legal establishment of an official process for redistributing unbuilt on city properties so that suitable building lots may be formed.
III. The extension of the municipal right of expropriation (act pertaining to zone expropriation);
IV. The establishment of different building police regulations for inner and outer city districts (graduated building regulations).

I. Building Plan
a. The interests of health demand cleanliness and dryness of the foundations, rapid and thorough removal of the garbage, cleanliness of the water courses; adequate supply of water, light, air and vegetation; protection against objectionable industries, considerable extension of the building plan, practical dimensions of street widths and building blocks.
b. In establishing the widths of the streets and the size of the blocks efforts should be made to gain suitable streets and building plots for different kinds of structures, to avoid rear buildings as far as possible, to encourage the erection of smaller dwelling houses. There should be provided: wide traffic streets, medium sized and narrow residential streets, large blocks for factories and villas, medium ones for ordinary dwelling and business houses, small ones for the dwellings of the poorer classes.
c. Existing city building plans should be examined in these points and improved as far as possible.
d. Where legislation still prevents or makes difficult the establishment of extensive and practical building plans these difficulties should be overcome by the establishment of a suitable flush-line law.

II. Redistribution
a. In the majority of cases the street lines of the city building plan cannot be so adapted to the property areas that suitable building lots can be laid out on these areas without some alteration of the property boundaries. The regulation of the boundaries or redistribution of the properties is necessary. This is sometimes accomplished after much trouble and loss of time by the agreement of all those concerned; but in view of the opposition to this process encountered among owners a redistribution law is needed, that is the right to redistribute such areas without the consent of each individual owner. This right is necessary, aa. in order to prevent unsanitary, uneconomical and unpractical construction and to make practical construction possible;
bb. to protect all the other owners from the malice of one and the small owners from the large ones;
cc. to increase the number of building lots in the market and thus work against the increase in price;
dd. to be able to carry out the systematic, connected development of the
city in territory where the building lots are in a mass, in the interests of the owners, the future tenants, the neighborhood and the city.
b. The basis of redistribution is the building plan which must previously be established.
c. The erection of structures on unregulated land that make redistribution difficult is to be forbidden.

III. Expropriation
The city’s right of expropriation should cover
a. the land necessary for the construction of new streets, open spaces and planted areas.
b. the remnants of pieces of property on new streets that are unfit for construction on account of their small size;
c. those properties in old city districts the possession of which is necessary before the reconstruction of such districts can be carried out and the requirements of sanitation and the traffic met.

IV. Building Regulations
a. The uniformity of the building regulations for the inner and outer city districts has resulted, in many city extensions, in housing conditions that are greatly to be regretted from the standpoint of health. Density of construction has increased from year to year and the roominess of the dwellings decreased.
b. The application to city extension territory of building regulations suited only to inner city districts and allowing the greatest possible use to be made of the land has not indeed produced but has encouraged a speculation in land and buildings that has lowered the standard and increased the cost of living and in the whole realm of social life has produced one of the most lamentable conditions of our times.
c. Among the measures which should be taken to remedy this are building police regulations providing for lower and less dense construction in the outlying districts. To this end it is advisable to divide the city into districts with graduated building regulations for each district which are made with due consideration of the value of land and the desirability of encouraging single and combatting large flat houses.
d. In graduating the building regulations the following districts should be separately provided for according to the need and local conditions:
   aa. detached building districts,
   bb. districts in which the construction and operation of factories and objectionable industrial plants are forbidden,
   cc. districts in which the construction and operation of factories are encouraged.

(Referenten: Stübben and Küchler)
Resolutions Of The Meeting For The Preservation Of Historic Monuments Held in Erfurt 1903 Relative to Building Flush-Lines In Old Cities.

1. Old structures of artistic and historic value especially characteristic private houses must be marked as such on the flush-line plans.
2. A building flush-line that extends in front of or retreats behind the flush-line of such structures is to be established only if the demands of traffic and health absolutely require it. Ways must be considered how the structures can be adapted to the new flush-line, or how they can be altered if necessary. Especially the building over of footways demands attention. In picturesque towns and places that are developing slowly changing the walls of the streets by the establishment of flush-lines should rarely be undertaken. If alterations are urgently necessary the town should proceed from case to case acting under the advice of technical experts.
3. Changing the level of the street in front of the structures mentioned in 1 is admissible only if traffic considerations, protection against high water etc make any other course impossible. Also in such cases ways must be considered of adapting the old structure to the new level.
4. New building flush-lines should if possible be so established that not only the old structures are protected but also the character of the old streets preserved. Straight flush-lines and levels are not to be carried out if injuries of this kind are to be feared. In establishing new flush-lines for the widening and improvement of the streets curved streets and street walls and characteristic differences in level must be retained as far as possible.
5. The closed appearance of the walls in old streets and squares must be protected as far as possible when, for the sake of traffic, widening of the streets, changes in direction and cutting through new streets is undertaken.
6. The needs of traffic or esthetic considerations may require that a clearing be made about an edifice. In both cases before the establishment of the preliminary flush-lines the question must be carefully considered whether the whole view of the building and its surroundings will gain or lose by the intended “clearing”.

If it is feared that it will lose and the clearing is to be undertaken for the sake of the traffic the latter should, if possible be led into other channels. If esthetic reasons are the motive it is doubly necessary to omit the clearing and, if necessary, improve the surroundings of the building in another way.

(Referenten: J. Stübben, K. Hofmann and C. Gurlitt)
XXIII

Resolutions Of The “Denkmalpflegetag” in Mainz 1904
Pertaining To Building Police Protection Of The Views
In Old Streets And Squares

The fifth meeting for the preservation of historic monuments recommends that the erection of new buildings or the alteration of old ones in the immediate vicinity of historic monuments be made subject to permits to be issued by the building police also as regards the outward appearance of such buildings which must be harmonious and in accord with the general view of the old structures or streets. This applies also to shop signs, advertising posters etc.

In this connection it is pointed out that in order to obtain this necessary harmony the heights and outlines, shapes of the roofs, walls and superstructures and the materials and colors to be used in the exterior architecture must be suitable while as regards the details artistic freedom may be allowed considerable room.

In deciding the artistic questions that arise it is advisable to obtain the advice of experts, including architects, art historians representatives of the national preservation of monuments and artistically inclined laymen.

In as far as legislation does not afford a basis for the necessary legal regulation the supplementation of the law is to be advised.

(Referenten:Frentzen and Stübben)