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 In this book we publish Albrecht’s translation basically unrevised, as a historical document, with all of its flaws.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.

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6 Available at https://archive.org/details/derstdtebau00stgoog.
Acknowledgments

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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
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PART III

THE COMPLETE PLAN
PART III

CHAPTER 1.

Historical Review

A history of city building has not yet been written. This historical review is not of course intended to supply this deficiency in our literature. Its purpose is rather merely to give an approximate idea of the development of city building in historical times and it should also form a certain basis for the consideration of modern problems of city building in connection and comparison with earlier creations.

Pre-Grecian Antiquity

In the antique world before the Greek era the cities were principally settlements founded by individual despots who had their residence there. Of vast extent, encircled by walls they contained the royal castle which was also strongly fortified and nearby, the temple and public buildings, while round about were the dwellings of the warlike fellow tribesmen. These cities took no part in the production of goods but were simply the centers where the booty of war and tribute were consumed.

So it was with the Egyptians, Assyrians, Babylonians and Persians. A new ruler often built himself a new city and the old one decayed rapidly for, in Egypt at least, bricks of clay were the chief building material. Only one of the Egyptian royal cities was preserved for a long time, Memphis; and Thebes as the place where sacred objects were kept. Our knowledge of the ground-plan of these ancient cities is quite incomplete.

Babylon and Ninive, Sufa and Ecbatana were the scats of the rulers of the races that succeeded one another in the government of Anterior Asia; the Assyrians, Babylonians, Meder and Persians. Of these great cities only Ninive, which according to the prophet Jonah was so extensive that it took three days to travel through it, has been completely destroyed. According to Herodotus Babylon formed a tremendous quadrangle surrounded by a double wall, each side of which 22km long. Thus it must have obtained 484 sqkm, that is, it covered an area seven times as large as the city of Berlin. The rectangular streets were laid out according to the points of the compass; they terminated at the traditional 100 gates and are said to have been lined with three and four-story houses. It is probable however that no connected construction existed and that the houses were built in loose groups with extensive fields, gardens and pastures about them which in time of war would accommodate the whole surrounding population with their cattle, while the size of the city would make it difficult for the enemy to...
besiege it. The royal palace and the chief sanctuary, the Tower, stood on artificial hills.

But inspite of their rich color these gigantic cities lacked a higher value as complete plans. Jerusalem and the Phoenician settlements, adapted to the natural formation of the ground affording protection and opening themselves to traffic, seem to be the first cities that lead up to artistic Greek city building.

**b) Greek City Building.**

The Greek state formations were city-states. Perhaps the greatest achievement that the Greek mind ever produced was the law and arrangement of the “Polis”, the city-state. Only a number of small peasants, tenants and slaves lived in the country; property owners and well-to-do people found life in the city indispensable. The citizen of the city-state was a landowner and agriculturist; trades were generally left to foreigners and slaves. Later however in the cities on the coast, whose harbors were included in the city fortifications, commerce played an important part.

The strong power of expansion of the Greek races was not expressed by constantly enlarging their own city – only Athens with the Pireaus can to a certain extent be called a metropolis – but by the founding of towns on all the coasts of the Mediterranean. And from outside the forces poured back, stronger than before, to advance culture at home.

In the construction of Greek cities we can distinguish four periods; in the first cities were built mainly as a protection against attacks; in the second their object was the cultivation of traffic; artistic perfection reached its climax in the third and the fourth was that of decay.

The oldest Greek cities were built on the slopes of mountains and tops of hills where they could be easily defended. They were irregular but conformed to the formation of the land; many places in the interior of Greece, lower Italy and Sicily still show this choice of site and manner of building.

During this period the striving for traffic and commerce caused cities to be built in the river valleys and on the seacoast, both at home and abroad. Colonial cities in particular, like Syracuse, Acragas and the later Selinunt, bear witness in their ruined states to the industrial prosperity of that time and , as Strabo has pointed out with admiration, show how gifted the Greeks were in choosing the sites and forms of their cities. If they ground-plan of the old cities in the mother country, like Athens and Corinth, showed the central portion to be a confused mass of narrow streets the colonial activity required and furthered the laying out of cities according to most carefully thought out plans. Since the fifty century this new style of city building has come into universal use. Aristoteles understood under cities of thhis kind those that were easily surveyed and laid out according to a regular plan, if possible only of medium size, with a healthy situation and good water, well placed with regard to the sea and the land and
equipped with open spaces and public buildings. The latter in particular he considered as indispensable part of a city.

In the time of Pericles this development reached its greatest artistic height. After the plan of Hippodamus of Milet the port of Piraeus was built, celebrated in antiquity because of its beauty. An idea of its ground-plan, restored by Hirschfeld\(^1\), is given in fig. 545. Between harbor basins on both sides the Agora, surrounded by colonnades, formed the centre of the rectangular system of streets, with streets of varying widths up to 30m, theatres and temples forming

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the terminal points of the lines of vision. The temples were placed corner wise to the streets so that two fronts were visible from a distance – a favorite arrangement of the Greeks. The Doric coast town in Asia Minor, Knidos, is a great contrast, nestling closely to the hilly country and overlooked by the fortified height on which stood the temples of the patron gods of the town; at the foot of the mountain slope was the theatre cut out of the rock and affording a view of the sea and of the protective structures on the height. The inland city of Priene in Asia Minor also shows the Greek type clearly\(^2\), the streets of which, laid out

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\(\text{Fig. 546.}\)

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on a rectangular system (fig. 546), had many of them to be cut out of the rock, supported by walls or to be built as steps; they are narrow, 4 to 7m and the blocks and building plots small; but the market, the scene of public life, is very large, 75 x 100m in a town of only 20ha extent.

The antique city squares, as places for public meetings and festivals, took the place of the public halls of today (compare part II, chapter 7, under a).

Under Alexander the Great and the Diadochi the construction of new cities was a frequent task; but gradually the monumental contents disappeared while the regular lines remained. To the beginning of this fourth period belongs Alexandria the scheme of whose city plan, (fig. 547) was the work of the master builder Deinocrates. According to Strabo the two main streets that crossed each other at right angles were 30m broad and decorated along their whole length

\(^2\) Jahrbuch des Kaiserlichen Archäologischen Instituts, Bd. 12, Archäologischer Anzeiger, p.178
with colonnades; one of these main streets, the Canopic road, still exists, while otherwise little of the old city has been preserved.

Fig. 547
Alexandria 1. and 2nd century B.C.

c) Roman City Building

The Romans also proved themselves to be clever engineers in the choice of the sites for their settlements: traffic facilities, safety and healthiness, water supply and drainage were always carefully considered. Artistic feeling on the other hand was expressed more in the magnificent public buildings and squares than in the usual scheme of the city.

This scheme was developed from the building plan of the square Castra in which the Cardo and Decumanus ran at right angles to correspond to the four gates. In numerous places that were formerly old Roman cities, for instance in the centre of Turin, Verona, Florence, Cologne, Strassburg etc. the Roman street system is still more or less clearly recognizable, particularly in the city of Aosta, the former and present ground plans of which are shown in figs. 548 and 549. But the regularity of the plan appears only in those cities that were designed all at once, not in the older cities that grew slowly; they were not laid out according to rule either by the Greeks or by the Romans. There is a very considerable

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difference between the irregular, charming plan of the old centre of Pompei (fig. 550) and the rectangular scheme of the Colonia Augusta Taurinorum, now Turin (fig. 551), which has only lately been adapted to modern traffic requirements by the cutting through of diagonal streets.

Our knowledge of the former city plan of Rome is incomplete; yet in spite of frequent destructions and changes the lines of many old streets are still be found and some of them are still preserved in the street system of today. They lay more or less like rays from the centre of the city towards the outside, through the forums or past them and beyond the gates they were often continued in straight lines over hills and valleys for long distances. Cross streets, generally very narrow, divided the areas between the main lines into so-called insulae, many of the characteristics of which, unpleasant ones for the most part, are known to us, but no general ground-plan.

The real public square of the Roman cities was the forum (compare fig. 474 in Arles and fig. 828 in Pompeii). The ruins that remain of the forums in
Rome, Pompeii and elsewhere give us an idea of the former magnificence of these festival halls of the city. More than with us these squares, which in more modest form also served as Aosta, layout of the city of today
markets, determined the ground-plan of the city. We recognize their influence in much that was produced in Roman cities during the Renaissance and Baroque period, of which we shall speak later.
d) Medieval Cities

In the social order of the Middle Ages the cities played a different part from what they did in antiquity. Of course in the Middle Ages they were in the first place intended as fortified places and were therefore all surrounded by walls and ramparts to the protection of which the country population was also entitled in time of war. But these country people were not absorbed into the cities as in the Greek states and the old Roman Empire; they formed communities of their own under special landlords⁴). The country people as peasants were sharply distinct from the “citizens”. The country produced the raw material; in the city lived the tradesmen and merchants who worked up the raw material and by exporting and importing built up commerce. The city market served for the exchange of the products. The antique cities were founded by command of the rulers. In the early Middle Ages (under Henry the first as well as under Guelph’s and Zähringern) this was very rarely the case; most German cities on the contrary grew up gradually from country communities and remained small towns. Recent investigations have shown that no mediaeval German city had

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more than 25,000 inhabitants.

The surplus strength of the people found its outlet in the late Middle Ages in the colonization of the east, which went hand in hand with a busy period of city building. This is the reason that the mediaeval towns that grew up gradually are found in the southwest part of our country, those that were founded or laid out, on the contrary, mainly in the northeast half.

Of course even the first named cities were not the result of chance but the gradual production of thinking men. Close to a castle, a church, a monastery, the kernel of the city, surrounding a market-place, was formed and spread in circular form; the ways that led out from it through the fields were bordered by rows of houses and closed by gates in the surrounding wall. There was no geometrical plan on which the streets and lines of the buildings were drawn in beforehand, to be later translated into reality; the lines of the streets and the sites of the houses were determined on the spot according to the dictates of need and choice. The

Fig. 552
Lennep
result was that the acute-angled forks of the field paths were retained but the side roads branched off as far as possible at right angles to correspond to the form of the houses; curves and irregularities of all kinds were produced, offsets, blind lanes and streets of varying widths.

Fig. 553
Dortmund
Fig. 554
Braunschweig
The work of the individual citizens who built with little guidance is seen in Germany as in Italy principally in the old Roman settlements whose original regularity, as in Strasburg, Cologne, Verona, Aosta, has been not indeed obliterated, but very much modified. Traffic, in the modern sense, was not known in the Middle Ages; Roman roads and bridges fell into decay or were destroyed, only to be renewed, as in Cologne, after long centuries had passed. Yet there were of course certain through main roads, old and new; they often formed the backbone of the city, like the Hochstrasse in Cologne, the Maximillianstrasse in Augsburg, the Kaiserstrasse in Freiburg and the Anger in Erfurt. In many places the
later expansion of the city, following the line of the wall, produced distinct ring streets, as in Aachen, Antwerp, Basel and Braunschweig.

This was the condition of the cities when, in the late Middle Ages, they entered into the period of their economic and artistic flower, when, by the erection of new churches and town halls, market halls and guild halls, the appearance of the streets and squares was beautified and changed, when the squares were widened and decorated with artistic fountains, when a consciousness of prosperity took possession of the citizens and the
practice of art became general, causing people and guilds to vie with one another in the development of the city. The charm of these mediaeval cities lies in the individuality that everywhere predominates and in the room-like closed effect that is found in the streets and squares; and the city scenes became the more quaint and picturesque the more passing centuries left their various stamps on the crooked streets and irregular squares of a city scheme that was conceived in the early Middle Ages without any unified plan. Indeed, the majority of the buildings that make up the picturesque “mediaeval” city views belong to the period of the Renaissance. Riehl calls Augsburg the Pompei of the Renaissance. In Augsburg and Nürnberg, Hildesheim and Brügge, we see not the creation of one period, the result of a planned city, but the work of centuries.

The cities Lennep, Dortmund, Braunschweig and Moscow in figs. 552 to 555 show the round, irregular outlines common in the early Middle Ages. Lennep shows a double, Dortmund a single ring line; in the Braunschweig plan it seems to be possible to distinguish between the older western and the later eastern part. In Moscow we see a second ring formation round the centre of the city, the Kremlin, dividing it into two zones, the inner “white city” surrounded by a wall and the newer “earth city” surrounded by suburbs which have grown until they now form part of it.

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Nürnberg is also circular in form but with clear indentations at the points where the Pegnitz is crossed. The town which was not founded, but grew was built up gradually round the imperial palace that was erected in the eleventh century and soon so outgrew its first belt of wall that towards the middle of the thirteenth century a new one was built to include all the new settlements. The double ring is fairly recognizable in fig. 556.

Another way in which mediaeval cities expanded was by doubling (or lengthening) as shown in fig 557 (Tangermunde), 558 (Rostock) and 559 (Bern). This produced, in spite of all irregularity, a scheme akin to the rectangular and in Bern a long drawn out form which is divided across into four parts and is favorable to a marked prominence of the main streets.

Fig. 558
Rostock
The beautiful scene found in the “old town” in Landshut (fig 560) shows, seen from either direction, the artistic effect of slightly concave street sides and the “closed views from the streets of the towering churches at their terminal points are very fine.

Viterbo (fig 561) is remarkable for its particularly confused and intricate network of street; but the traffic streets are clearly distinguished from the badly developed scheme of the side streets, and the numerous, generally very irregular squares and street expansions, ornamented with beautiful fountains, afford
charming views.

Essenwein is of the opinion that the mediaeval architects looked upon the irregularities of their cities as the unwelcome result of compelling circumstances. Perhaps this is putting it too strongly; but it is undoubtedly true that there was no general conscious artistic pleasure taken in these irregularities. This is shown by the fact that the scheme of city districts that we know to have been laid out during the late Middle Ages is regular (for instance in Braunschweig, Hildeseim, Göttingen, Gotha) and not only of such districts but of whole cities that were founded then in France, Germany and especially east of the Elbe where hundreds of colonial cities were laid out on a rectangular plan. To be sure we rarely find even there the perfectly straight lines of today; and a certain freedom in the way the lines are carried out, intentional or unintentional, combined with moderate variation in the street width contributes in some places, for instance Krakow, Breslau, Danzig, to the intimate effect produced in spite of the regularity.

Figs 562 to 570 illustrate such cities in Southern France (Aigues Mortes), Dalmatia (Ragusa), Western Germany (Hülchrath and Zons and the Slavish colonial district of eastern Germany (Liegnitz, Köslin, Posen, Breslau, Krakow).

Aigues Mortes (fig. 562) on the coast of the Mediterranean, dates from the time of the Crusades. The city wall and the gates, erected in the thirteenth century, have been preserved almost untouched and are exceedingly

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6 In part II vol.4 section 1 (Mittelalterliche Kriegsbaukunst) of this “Handbuch”, p. 30.

picturesque; but in the city itself the pattern-like street system offers little that is attractive. It is very different with Ragusa (fig. 563) where not only the outside appearance of the city with its surrounding wall, its towers and lovely landscape offers an abundance of picturesque views, but also the main street (Stradone)
and the three open spaces (Signoria, Mercato and del Duomo) indeed even the network of narrow little streets.

The two small fortified towns Hülchrath (fig. 564) and Zons (fig. 565) probably belonging to the fourteenth century, are gathered about their old castles. Attractive views are found not so much in their straight streets as in their towers and walls.

In Liegnitz although the street system is in itself regular it has been adapted to the oval outline of the city thus producing pleasing curves (fig. 566), which enrich the street views; the castle, the market-place (compare marginal heading 202) and the adjoining church square are all remnants of the old city. Also the old city in Leipzig (see accompanying plate) shows several curved streets besides the straight sides of the square, while in Köslin (fig. 567) and Breslau (fig. 568) the rectangular street system, bounded by a circular line, is very marked. Posen (fig. 569), dating from the fourteenth century, shows the same regularity in its inner town to which, after the oldest wall was taken down, new city districts without any system have been joined. The set mediaeval plan together with the old wall has been very well preserved in Krakow which in spite of its regularity is rich in fine street views. (fig. 570)

e) Cities of the Renaissance and Baroque Period.

During the Renaissance\(^8\) the regularity and symmetry of the buildings

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was extended to the streets and squares. The Italian cities vied with one another in the sixteenth century in the rectification and widening of streets, in making their squares regular and in cutting new streets through the confused network of old lanes. The theory of Leone Battista Alberti who declared that, for aesthetic reason, serpentine lines were to be preferred if not for the main highways at least for the side streets because they gave variety to the city, made it look larger, broke the force of the wind and provided shade, aroused but little attention.

From Julius II to Sixtus V, from Michelangelo to Domenice Fontana, the city of Rome experienced a complete artistic rejuvenation: The Piazza del Popolo, the Via Sistina, the Scala di Spagna, the Capitol, the Lateran Square ad St. Peter’s Square bear witness to the brilliant activity in city building that existed at that time.

The Baroque Period, like that of Pericles, created an art that regarded the building of a city as a whole. It spread from Italy, where, besides Rome, Florence and Palermo in particular where built over and beautified, to Spain (Madrid, Salamanca, Bilboa), France and Germany. In France, besides Paris, particular mention should be made of Nancy, the city of Stanislaus Lesczynski (fig. 571). The part of the city that is built according to the regular Baroque plan with its straight streets and its squares, some of which are very extensive (Place Stanislas, see fig. 440, Place de la Carrière, Cours Léopold), triumphal arches, monuments, and gardens, is easily distinguished from the irregular mediaeval part.

After Germany had recovered from the suffering of the Thirty Years War many princes there became active in founding new city districts and cities, generally in connection with the erection of castles or palaces. Berlin, Cassel, Hanau, Darmstadt, Würzburg, Mannheim, Ludwigsburg, Düsseldorf, Koblenz (see fig. 475) are well-known examples.

But artistic achievement did not remain at its height; artificiality and set patterns soon gained the upper hand. The checkerboard (Mannheim) or at best the fan-like plan became the general city scheme; in its most precise form it was introduced into America at this time where it has remained paramount ever since.
Another curious form should be mentioned here; it may be likened to a nest of squares with broken lines but closed at the corners, placed one inside the other and is found, for instance, in the so-called new Newtown near Magdeburg and in Freudenstadt in the Black Forest.

The plan of Mannheim (fig. 572) is not such a complete checkerboard as is generally supposed. There are streets of greater and varying breath whose changing flush-lines produce many a pleasant street scene; the palace too is effective in this way. An almost circular ring street has been laid out on the site of the former wall but open at the palace garden; the plans of the new parts of the city lying outside are not rectangular. Also in Karlsruhe (fig. 573) the fan-like street system which radiates from the palace and is traversed by the “Lange Strasse” (now Kaiserstrasse) has not been continued towards the outside; there rectangular and other blocks adjoin that have no organic connection with the “fan town”.

As an example of American city building fig. 574, illustrating the city plan of New York, may serve. Characteristic of New York, as of other cities in America, is the direct way in which different street systems are placed together, the unconsidered manner in which the checkerboard plan is continued across the serpentine line of Broadway and the formless termination of the building blocks at the river banks. It is no wonder that, seen from the water side, the city is impressive by ugly and that in its central districts it appears busy but cheerless.

The city plan that resembles a nest of squares one inside the other is found in its most pronounced form in the little Württemberg town of Freudenstadt in the Black Forest (fig.575). The middle is occupied by a very extensive open space, originally intended for the site of a palace, one corner of which serves as a market while the rest is taken up by gardens, paths and subordinate buildings. The depth of the building blocks is so slight that there is only limited room for a house with its belongings and the backs of the houses with farming tools and manure heaps are turned towards the rear street. The corners of the squares are generally closed so that the buildings in the angles adjoin one another. Even the church which occupies a corner of the innermost square consists of two naves.
placed together at right angles while the pulpit is situated in the corner (fig. 576). A certain resemblance to the Freudenstadt plan is found in the outlines of the so-called new Neustadt near Magdeburg (fig. 577), which was laid out at a later date. There too the right angles of the streets are placed one inside another and the corners are closed. The reason for this arrangement is said to be the easiness with which such a town could be defended, as it would be necessary to hold only the two main through streets.
Fig. 567 Köslin

Fig. 568 Old-Breslau
Fig. 569
Posen
Fig. 570.

Krakau.

1/25000 w. Gr.
Fig. 571
Nancy

1. Stanislaus Place with monument  A. Porte de la Craffe
2. Dombaste Monument  B. Porte Desilles
3. Carnot Monument  C. Porte Stanislas
4. Drouot Monument  D. Porte Royale
5. Herzog René Monument  E. Porte St. Georges
Fig. 572
Mannheim
Old Town and expansion
A. Water Tower    B. Festival Hall (Rose garden)
Fig. 574
New York
f) City Building in the XIX Century.

Following the great collapse towards the end of the eighteenth century came the poverty and impotence of the first half and then the unequaled rapid development of the second half of the nineteenth century in city building. The population and area of many cities has increased three and four fold. Municipal authorities and architects alike were unprepared for the tremendous demands that were produced by this development. Hence we cannot wonder that the city building of the nineteenth century bears the marks of unfinished work, often even of the apprentice’s hand and that experiments of all kinds were made until gradually a certain practical and artistic aim was recognized.

The energetic building over and systematic expansion of the French capital (fig 578) seems first to have acted in France and Belgium as an inspiring example. Probably the principal characteristics of the Paris city plan are decided radial, diagonal and ring streets, long straight distant views, rich horticultural decoration, clear traffic lines and their convergence at certain points that were frequently developed into radial open spaces. Its relation to the extension of Strassburg (see accompanying plate) and to the new parts of
Brussels, Lüttich and Antwerp (figs. 579 to 581) cannot fail to be noticed. The south quarter of Antwerp planned by de Keyser slows the diagonal street lines in their most pronounced form.

Though the plans for the expansion of Strasburg, made originally by the French architect Conrath, were directly influenced by Paris, the effect of the woot is less pronounced but still clearly to be seen in the plans of Cologne (see accompanying plate; also figs. 582 & 583) by Stübben, Szegedin (fig. 584, by Lechner), Tokio (fig. 585, by Boeckmann), the City extensions of Mannheim (see fig. 572), of Wesel (see accompanying plate: designer Stübben), of Schöneberg near Berlin (fig 586°), Designer: Berlach, also in the new railway station district of Rostock (see fig. 558), in which unfortunately several greenspots have not been indicated; designer: Baumeister) and in a freer form in the plan of the Hölderletal in Freiburg i.. Br.

Fig. 577
New Neustadt near Magdeburg

From: Zentralblatt der Bauverwaltung. 1903, p 450.
(fig. 587; designer: Stübben). More approaching the rectangular form are the city extensions in Vienna (see accompanying plate), the new districts in Leipzig (see plate opposite page 278), the new town in Mains (fig 588; designer Kreyssig), the city extensions in Olmütz (fig 589; designer: Sitte).

Fig. 578
Paris with its main streets
Fig. 579
District Pré St.-Denis in Lüttich

Fig. 580
District Quartier du Sud in Antverp

Fig. 581
District Ste.-Marie aux Neiges in Brussels
Characteristic of all these plans which are by no means to be despised are geometrical lines and a decided variation from the irregularity of the old city districts, also, in Olmütz, less pronounced traffic lines. We find geometry strongly predominant in the suburbs Friedenau (fig 590) and Dahlem (fig 591) near Berlin, as well as in the new parts of Dortmund (see fig 553), Karlsruhe (see fig 573), Tangermünde (see fig 557) and nearly all German medium-sized and small towns, of which Tangermünde is a sad example.
It is to be regretted that this sober geometrical fashion is still strongly in evidence in the city building that has been done since the beginning of the twentieth century. It is true, many prominent experts, artists and economists, wide-awake city governments and state authorities have in recent decades taken active steps to further the perfecting of city building; and their efforts have been attended with a measure of success. But we have still a long way to go before we reach a universal, modern applied art in city building.
Fig. 585
District in Tokio
PART III

CHAPTER 2
The General Construction of Cities

The manner in which cities are constructed is generally the result of the geographical and topographical position and of their history. The site of most great cities corresponds to the natural convergence of the traffic lines at the time they were founded or when they began to prosper. Important changes in the lines of travel have been the cause of the decay of some cities and the advance of others. In both large and small cities in the past and in the present the examples of this process are innumerable. Happy the city that is so situated that whatever changes may take place it will still remain a centre of traffic.

Favorable places from this point of view are river valleys where they join the plains (Turin, Toulouse, Vienna, Basel, Cologne, Leipzig, Dresden): also the confluence of two rivers (St. Louis, Lyon, Paris, Lüttich, Koblenz, Mainz, Mannheim, Belgrad), the mouths of rivers where they enter the sea or a short distance away from it (Marseilles, Le Havre, Antwerp, London, Rotterdam, Hamburg, Stettin, Alexandria, New Orleans, Buenos Aires) and the most inland points of bays (Genoa, Trieste, Christiania, St. Petersburg, Odessa, Kalkutta):
Fig. 587
construction plan of the district of Hölderle in Freiburg i. Breisgau
and finally the central points of fertile strips of country and industrial districts (Brussels, Dortmund, Budapest, Moscow, Milan).

The geographical position, on which depend the climate and character of the settlement and the character and occupation of its inhabitants sets the first stamp of the construction of the city but the topographical nature of the ground is not less important in determining its appearance. The development of the city is governed and characterized by whether it stretches along the seashore (Fiume), or a natural harbor (Marseilles), along one or both river banks (Lyon), extends over a hillside (Stuttgart), is spread out in a long valley (Barmen-Elberfeld) or in an unlimited plain (Milan), lies on hills and table-lands (Brussels, Paris, Zürich), and by other peculiarities of the country. When a city is built along the seashore and up the adjacent height amphitheatrical construction results, such as we admire so much for instance in Constantinople, Trieste and especially in Genoa. On broad rivers one bank serves as a site for the city; on the opposite side a ferry, the end of a bridge, a fort or a railway station generally causes a small settlement to be built (Bonn, Mainz, Strassburg, Turin, Antwerp). In rarer cases a complete though smaller town is laid out on the other bank (Cologne, Basel, Mannheim, Frankfurt a. M., Dresden, Budapest). Always however the broad river forms a distinct barrier which may be greatly reduced by one or more bridges but cannot be entirely done away with. Not so with smaller rivers in large cities, as in Rome, Florence, Berlin, Paris, and even in London. In such cases the river in consequence of numerous bridges loses its character as a separating agent more and more and as a water highway it enters into the service of the community.

Mountain sides divide and limit cities still more effectually than do rivers; Edinburgh and Zürich are examples. In Stuttgart and Le Havre, Barmen and Geneva, the city climbs slowly up the mountains. Brussels and Pittsburg, Trieste and Helsingborg are divided into an upper and a lower city. A mountain ridge was the original division between the cities of Aachen and Burtscheid which have now grown together. Heights and water basins form the attractive decorations of the city scene; what the hills in and about the city are to Rome and Paris, the Alsterbecken and the lakes are to Hamburg and Schwerin.

As the third basis for the manner in which the city is built we named its history. Not only its political but also its artistic and economic history exert a great influence on the kind and extent of the city’s development. Its character varies according to whether it is or was the residence of a royal patron of art, the centre of a powerful state or province, the seat of a high culture or prosperous industry. What a difference there is between our cities of the early Middle Ages, the Italian cities created by the Renaissance and the modern cities in America.

b) Influence of the Systems.

As we have seen the early Middle Ages generally produced cities whose streets ran in a more or less radial direction towards a point of convergence (
Fig. 588
Mainz
the “market”, the “square”, the ring”) and were connected by a circular or semicircular line, and were divided by side streets, for instance, Aachen, Münster i. W., Braunschweig, Munich, Lennep, Lüdenscheid, etc.; usually resulting in a picturesque, crooked-lined settlement. The “central” cities grew and added one ring after another, not always clearly pronounced but still recognizable (for instance, Mainz, Koblenz, Cologne, Aachen, Antwerp, Würzburg, Vienna, Basel, Milan, Paris, Moscow).

The radial is also often called the natural system because it passes most easily into the country roads and paths; yet without some alteration and supplementation of the existing system of roads and field paths a practical and serviceable radial system cannot be carried out; this alteration is difficult at times but it is so much the less to be avoided if the necessary changes in the level obliges the owners to build artificial roads before city building can be carried out.
Cases are very rare in which a city can be developed naturally without disadvantages simply by the gradual building up of the country roads and lanes which can then be absorbed into the city without misgivings for the future. They represent in the sense in which the term is used above the natural system of building. This should not be understood as a recommendation of the planlessness that still unfortunately often rules in medium sized and small towns which may be regarded as a modification of the natural system.

The opposite of the natural, the artificial system proper, is the rectangular, which strikes a stranger as monotonous and wearisome and is indifferent in its effect on the citizens themselves. It is particularly ugly when it is laid out regardless of hills and valleys as is Darmstadt, Wiesbaden, the Flemish town of Nieuwpoort, San Francisco etc. It also inadequately fulfills the requirements of traffic for to pass from a point in one street to a point in a different one two sides of a right angle triangle must always be traversed. Hence a purely rectangular system would
seem to be suitable only for a small city district and for the subdivisions of a city laid out on a radial system.

Americans however seem to be entirely satisfied with this system; their aesthetic desires are apparently not modest and in general they seem to find that the traffic disadvantages are sufficiently overcome by their city and street railway systems. American streets are very wide: from 40 to 50m for main streets, 20 to 30m for side streets; diagonal streets are rare. If a river or similar obstacle divides the city into several quarters or even if an old traffic street cuts through it in a direction that does not fit in with the general scheme, each quarter is laid out on its own checkerboard plan which may be absolutely different in direction and block division from the neighboring one. Thus, as Baumeister fittingly remarks, “the city plan of Philadelphia looks as if several sheets of checked paper had been pasted together without any regards to the ruling”. While we seek to individualize our streets and to give them names of their own people in America are satisfied to use numbers and letters; in addition a distinction is made in New York and other cities between streets running in the long direction, called avenues, and cross streets, called streets, everywhere we find a pattern, never individuality.

The third so-called city building system is the diagonal or triangular system (compare for example fig. 580: south quarter of Antwerp). A number of traffic centres either already existing or proposed to be established of suitable points are connected with one another by direct street lines. Thus a net of main streets is formed the meshes of which will be triangles with some few squares. If the centres are well arranged the traffic is thus admirably served; but if the system is thoroughly developed all the streets become in reality traffic streets; the almost exclusively acute-angled blocks make construction difficult as well as the choice of sites for public buildings, and the formation of closed architectural squares is almost entirely frustrated.

Thus we see that if all justifiable demands are to be met there can be no idea of carrying out a system that is all together radial, or natural, rectangular, or diagonal. The word system alone is out of place. City building does not require either in the practical or artistic sense any system or scheme. The natural topographical conditions, ways and boundaries are the given points of departure for the city building plan, they should be
disregarded only when they stand in contradiction to the requirements of traffic, of industry, of construction and art. The more closely the city plan is adapted to what is provided by nature the more individual and attractive it will be. Rectangular divisions should be used in supplementing the existing ways so as to make the street scheme complete because the rectangular is the best shape for the blocks and for the real needs of traffic diagonal streets are at our command. Streets that radiate like the ribs of a fan are especially suitable for use at city gates, railway station squares, the end of bridges and similar points. But all such artificial component parts of a city building plan that are to be added to what naturally exists are not in themselves obliged to conform to the law of the straight line or the regulation of parallel street and square walls. As a rule curved lines are better than straight ones in a hilly country; on a wide plain, in order to afford distant views or impressive ones and for simple block divisions straight lines are best adapted. The final decision rests in each case with a practical conception of the task combined with artistic feeling. If we may speak of the use of definite systems at all, these should not play a dominant but a subordinate part.

Traffic needs broad free streets and open spaces but it is not hindered by residential streets of moderate width intended only as approaches to the houses. Neither is it inconvenienced by closed architectural squares and garden areas that, situated in appropriate spots are more or less remote from the bulk of traffic. By making the streets and squares individual in character according to the purpose they serve, modern cities may become richer in variety than those of earlier centuries. An abundance of designs and ideas are at the disposal of the architect whose projects rest on a practical basis open traffic centres, closed, framed architectural squares, varying street widths, projecting, retreating and curved street walls; effective placing of monumental buildings on the concave side of the street, as the terminal point of a street, as the dominant element in a square, or on a height; horticultural decoration, fountains and statues; distant views and intimate, homelike street scenes etc. For what has been said of the requirements of traffic applies also to sanitary, social and economic demands: they do not hamper the artist in city building but provide him with the material which it is his task to mould and form. The more this is done with individuality and variety the better. It is clear that a certain variety must exist in the different quarters of the city: business district and residential section, manufacturing quarters and workmens’ colonies, flat-house and villa districts differ from one another in their appearance as well as in their requirements. By arranging the parts in a well-proportioned whole the constructive development of the city is furthered and it is easy to find one’s way about in.

c) Garden Cities

The idea which originated in England and has been transferred to the continent, of aiding the decentralization of the industry and the population by
founding so-called garden cities, deserves widespread recognition and application. The essential points of the idea are as follows: “garden-like settlements on cheap land separate from the city, the price of the land not to exceed or to exceed by very little its agricultural value; common possession of the land; methodical planning out of the new settlement which is listed in size; its hygienic and aesthetic treatment; self-reliance. The final aim is the eventual division of the country into garden cities, thus actual decentralization of the large cities.”

It cannot be overlooked that the success of these endeavors is made difficult by several of the above-mentioned points, especially by the unconditional demand of common possession of the land, by the complete separation from the city and by the general principle of garden-like construction. A city consisting entirely of houses with real gardens, or to be an even greater extent of single houses with gardens, is scarcely possible under continental conditions. Building in closed rows and houses for several families cannot be avoided.

The model plans for garden city settlements which have so far been published suffer under geometrical monotony and hardly correspond to the needs of different kinds of construction on and of practical life. Nevertheless there is no reason why better plans should not be made than these that have been produced in England. With the changes in its programme which we have mentioned the garden city movement will in all probability attain its object, a result that can only be desired by all who care for the improvement of housing conditions.
PART III

CHAPTER 3:

Extension and Alteration of Cities

A) Causes of City Extension

The principal causes which lead to the extension of cities are the increase in the population, the growth of industry, prosperity, improved public sanitation, social betterment, and, finally a decrease in the population in the centre of the city. These causes are not independent of one another.

The increase in the population is due to the excess of births over deaths and to an excess in the number of people moving into the city over those moving out of it. The excess in the number of births varies greatly in different nations; it is larger among Slavs than among Germans and among the latter than in Latin countries. The annual excess in the number of births in the German Empire is about 1% of the number of inhabitants, that is, about 600,000; in France it is only about 1/6 %, that is about 60,000 souls. But this increase in the population is not equally distributed in the cities and villages. More people move into the cities than away from them and the reverse is true of the villages. Thus it follows that the population of the German cities increases annually by more than 1% on an average while the country population remains about the same. Whereas about the middle of the last century of 35 millions Germans about 26 millions lived in the country and 9 millions in cities, today 60 millions Germans about 26 millions live in the country and 34 millions in cities. Thus the number of city dwellers has increased almost fourfold and in consequence the amount of city extensions is now about three times the amount of the cities that existed in 1850! In France too the increase in the population flocks into the cities but it is both absolutely and relatively considerably less; in the French plain country, in some districts the population has decreased a conduction which is also observable in a less degree in certain parts of the country in Germany.

The population in the large cities has increased to a greater extent than that in the medium sized and smaller ones; in the latter, in some cases there has been a decrease. The annual growth of most of the large cities may be placed at from 2 to 5%, thus, assuming an equal development, it doubles in from 35 to 14 years. Large German cities have usually doubled in 25 years; some, for instance, Berlin, Düsseldorf, Essen, Gelsenkirchen grow still faster. Easier conditions of employment and increased opportunity for recreation are the attractions that draw people to the city; mutual competition is expressed in the strengthening of these two factors.

The growth of industry constantly requires more land for building and a
larger number of workers; the extensive plots of ground needed for manufacturing purposes extend the city the more it is thought necessary to place factories at a considerable distance from the residential quarters. Thus for instance the country community of Gelsenkirchen in Westphalia has become almost a connected city.

The increase in prosperity raises the standard of living so that more space is required for dwellings, just a stagnation in industry results in a decreased demand for houses.

Public sanitation and the movement for social betterment result in the condemnation of bad and inadequate dwellings in existing city districts and their replacing by new ones in other quarters. We often find far out in the suburbs new settlements founded by benevolent societies or in the interest of the employer.

Finally the increased number of business houses in the centre of the city and the growing noise of street traffic drives the inhabitants towards the outside. When whole houses, even gigantic buildings and whole streets contain only places of business, shops and offices, the centre of the city becomes depopulated.

The number of people who live in the city of London has decreased by nearly a third; a similar condition, in a lesser degree, may be observed in Berlin, Leipzig and Cologne. This results in an increased demand for dwellings in the newer parts of the city and in the growth of suburbs and villa districts.

If owing to these causes the expansion of the city becomes necessary the extent to which the city must expand varies of course in different places. The first task with which city building confronts the authorities is to ascertain to what extent the expansion is necessary and therefore how much land will be required. Just as it is foolish to plan extensive new city districts for cities that are standing still or developing slowly so too it would be a mistake not to make comprehensive plans for the growth of a city that in all probability will double itself in the course of twenty years. The time when such plans should be made and their extent thus depend on local conditions.

b) The Time to make Plans

Every city expansion whether it takes place gradually or goes forward suddenly after certain obstacles have been removed (destruction of fortifications, changes in the course of a river etc.) and not less the building up again of a city or part of a city after it has been destroyed by some natural event, begins along the radial lines that lead from the old centre of the city out into the country because these are the main arteries of traffic and, as the first streets to be finished, they are naturally the first to be built up. In consequence of this unwalled cities in particular stretch out long rays into the country (Frankfurt, Aachen, Leipzig). Even where a river or fortification presents an obstacle the ray-like formation, of the city extension beyond the obstacle is easily observable (Strassburg, Cologne, Antwerp). Thus building plots are often found miles away from the city on a country road while the sections lying between the radial streets are still given over
to agriculture. A few gardens and villas are not able to lend another character to such a farming community.

This condition is a normal one and need give rise to no misgivings up to the point when the distance from the city to the unbuilt on plots on the radial lines is so great that building speculation seeks to gain possession of the fields and gardens lying between the radial lines either by laying out plots for factories etc. or whole streets and street districts. Both may produce undesirable results: one because planless construction is thus begun, the other because the interest of speculation and that of the community at large are seldom one. City or state supervision is not enough in such cases; the authorities themselves must provide plans and see that they are adhered to.

Often enough the time when such plans should be made is missed owing either to a lack of technical knowledge or to hesitancy in assuming responsibility and costs. If later the community sees its mistakes it also sees that in the meantime obstacles have arisen which present extreme difficulties. These difficulties are that the gaps on this built up radial lines that would be suitable points at which to bring in peripherical and diagonal streets no longer exist and that the plans that provide for the most practical position of the city streets, their levels and drainage, can no longer be carried out because they cannot be brought into harmony with the structures that have since been erected on certain parts of the former country roads. Hence delay in making city building plans is not only productive of considerable expense that might have been avoided if the work had been done earlier, but the plans themselves must necessarily be defective.

On the other hand if the plan is made too early incompleteness may result because the future needs of the city cannot yet be sufficiently known. Changes in the plans can however always be made and are certainly easier than changes in structures already erected.

According to this the choice of the time when the plans should be made is an important duty of the authorities. It would be used less and harmful to establish a building plan before the city shows signs of developing, yet not as harmful as it would be to delay making plans after the development has already begun.

What is true in the field of city expansion also applies, in a limited degree, to improvements undertaken in old cities. It would be foolish to make comprehensive flush-line plans, traffic improvements and new street lines for an old city in which little new construction is going on; but it is a mistake in an old city where the old structures are constantly being rebuilt simply to look on aimlessly at the new aspect it is acquiring or now and then to require that some new building be set back. In such a city systematic revision and establishment of the building lines should be undertaken in the centre of the city as well as in the outlying districts.

“Every growing city”, says the German Society for Public Sanitation,
“requires a harmonious, comprehensive city plan for its development towards the outside and its improvement in the centre.” (See appendix).

c) Extent of the plan

In the above-mentioned rule the city building plan is required to be comprehensive. This corresponds to the first of the city extension theses that were advanced in 1874 by the “Verband deutscher Architekten- und Ingenieurvereine” at Baumeister’s suggestion. It reads: “The projection of city extensions consists mainly (better probably, first) in establishing the chief lines of all the means of traffic: streets, horse car lines, steam railway lines, canals, which should be treated systematically and therefore for a considerable distance.” The reason for this sentence is contained in the sentence itself. No harmonious, carefully thought out plan can be produced that does not embrace an area that is considerable in proportion to the city as it now exists. How this requirement is to be applied to the individual city depends on technical reasons based on local needs as was pointed out under a.

The mere consideration of immediate needs will by no means produce a serviceable plan. The carefully chosen expression used in the Prussian flush-line law of July 2, 1875, that the building plans are to be made “according to the probable needs of the near future” is certainly to be approved if under the “near future” we understand not several years but perhaps two decades, or under some conditions an even longer period.

As far as possible the development of the city in the future must be ascertained by considering its growth in the past and the influence which new traffic systems and industrial plants will have on it. The annual percentage by which the population has increased hitherto, the construction, or proposed construction of new railways, railway stations, harbors and navigable canals, the destruction of fortifications and such like are all of importance in deciding the question.

The connection of the city building plan with the above-mentioned public works is a necessity. The general plan of a city extension which shall suffice for twenty years to come, thus, when the population increases by 4%, for an area which is more than double, or when the increase is by 2%, for an area that is about 1 1/2 times the present city area, is certainly not extreme. Neither should it be forgotten that the new land is not so closely built up as the old city.

Of course no one can look into the future with certainty and particularly the development of railways and waterways is apt to differ from what is foreseen. Hence the best city extension plan will show imperfections and errors before the period is over during which it was intended to be carried out. This should not be

10 Of the seven largest German cities in the course of the last century the population in Berlin increased ninefold, in Hamburg sixfold, in Munich eightfold, in Dresden sevenfold, in Leipzig tenfold, in Breslau sixfold, in Cologne ninefold, this includes the suburbs.
interpreted as meaning that an extensive plan can be dispensed with; alterations in parts of the plan that have not yet been carried out are always possible at any time. City extension without a comprehensive plan would, on the contrary produce an unserviceable whole.

The first step, as was mentioned above, is the establishment of the building flush-lines on the outer radial streets at a time when building is just beginning. That done the next step is to establish the real plan of construction: the positions and levels of the ring streets that connect the outer radial lines, the introduction of new radial streets, the arrangement of the diagonal streets so as to distribute the traffic of the outer radial streets in the different districts of the inner city. This work of planning is controlled by the traffic lines of the steam railways and waterways, in as far as they exist, are designed, or are planned to be carried out at the same time as city extension (Mainz, Frankfurt, Cologne, Metz); the whole city building plan is changed and sometimes thrown entirely out of kilter if such traffic arrangements are designed and introduced later (Berlin, Hamburg, Düsseldorf).

The outside limit up to which the plan shall extend is generally set – with consideration of the causes of extension mentioned under a – by the nature of the locality. Parks, railways, watercourses, lakes, heights, the boundary line of a township form natural barriers. When development progresses farther parks, railway stations, harbors are embraced by the city construction. Railway lines are changed, re-laid or crossed by new sunken or raised streets. Small watercourses are arched over or deflected, larger ones bridged over; even on big rivers like the Rhine and Danube, Rhone and Po, the growing city continues its construction on the other bank. Dykes give way to municipal river embankments; mountain slopes and heights are eventually built on in spite of the attendant difficulties (for instance Stuttgart, Zürich, Havre). Yet it must be admitted that broad rivers and steep cliffs limit or change the course of construction and traffic.

Township boundaries are in so far a barrier as they hinder the establishment and carrying out of the city building plan in a uniform manner; to prevent this hindrance it is best early to incorporate the smaller townships in the large city. The cities of Vienna, Munich, Dresden, Leipzig, Cologne, Magdeburg and Posen have incorporated most of their suburbs. Where the city fails to do this at the proper time the difficulties in the way of a union later sometimes become insurmountable to the detriment of all involved. In London, Brussels and Berlin for instance it seems useless to hope for the incorporation of the adjoining places.

The immediate, absolute establishment of the network of streets between the main radial lines and the limit of the plans is not necessary and sometimes undesirable because it is easy in this way to anticipate a development the fundamental principles of which are not yet fully known. Mistakes may be made by cutting up the land into too small plots for some large future undertaking, or in the choice of the kinds of construction, size of the blocks etc. This early
settlement of details is especially hampering if the plan aims rather at adapting itself to some generally practical pattern than to the given local conditions.

A rule of the “Deutscher Verein für öffentliche Gesundheitspflege” reads: “The plan should be established and carried out, as a rule, only for the main streets and, according to the need, for those sub-divisions which are expected to be built on in the near future”. This is particularly important for spread-out open cities which are frequently built up in a scattered way; in such cases it is better simply to plan the sub-divisions but not to establish them publicly. Only when construction is about to be undertaken the building lines should be actually established after the original plan has been once more examined and the changed conditions taken into account that have meanwhile arisen. In smaller cities on the contrary, and in those larger ones that are limited in area, as, for instance, inside fortifications, it is often necessary to settle the plan at the outset down to the smallest details.

d) General Requirements

The traffic systems and directions form the basis of the plan of construction; hence it is the first task of whoever makes a plan for a city extension to study them in their present form and their probable development. If railway lines are to be changed or new railways constructed it is often necessary to establish their routes before the lines of the street traffic can be brought into harmony with them; this is sometimes difficult to accomplish because the work of designing is in the hands of different authorities with different interests. Cooperation is indispensable in many cases if the result is to be satisfactory.

Not all streets should be traffic streets. Areas of greater or less extent remain between the main highways which should be divided by streets of a second rank, so-called residential streets. While the main streets must be of considerable width which is to be graduated according to the amount of traffic they are expected to accommodate, (approximately from 15 to 40m and more), residential streets need only be wide enough to insure light in the lower stories of the houses, that is the street width must equal the height of the houses. The whole width however, (for instance 20 to 12m) need not be devoted to traffic; part of it may be laid out in front garden plots or independent garden areas. Thus the actual traffic width may be reduced to from 12m (roadway 7m, sidewalks 2.50m) to 7m (roadway 4.80m, sidewalks 1.10m).

Careful attention must then be given to the treatment of the open spaces; their practical purpose and artistic arrangement (according to part II, chapters 6 and 7) must be kept in view by the planner from the beginning: traffic centres at the convergence of traffic directions; architectural squares and garden areas beside the main streets or in the residential sections, but always so that the square is not cut up by traffic lines; double squares and group squares according to the needs of the locality.
Sites for public buildings are not to be left to chance but should as far as possible be established when the plan of the streets is made. Hence it is wise to ascertain beforehand, if possible what the demand for such structures will probably be. What churches will be needed can be fairly accurately determined, which is the more important as they, in particular, claim special attention in planning the appearance and treatment of the streets and squares. And the city should not be content with merely determining such sites but should early take steps to purchase them before advanced construction has raised the prices.

In the creation and disposition of the building lots for the purpose of private construction, thus in the measurement and division of the building blocks, the method of building in local use, or intended to be used, is determinative. According to whether large or small flat houses are built, or single houses, closed rows or detached buildings, workmen’s dwellings or factories the subdivision of the land lying between the arteries of traffic will vary. The course of the traffic streets too is not entirely independent of the shape and the size of the blocks. But while they are governed primarily by the needs of traffic the side or residential streets are influenced mainly by the requirements of construction. It is their task to divide the building land into blocks so that they can again be divided into building lots.

For sanitary reasons the ground and the water must be kept clean by establishing and preparing the best possible drainage of the new parts of the city; in addition there must be protection from floods and sufficient provision for light and air by arranging for suitable street widths, open spaces, front garden plots, garden areas and parks; finally, in filling in the streets and the blocks care must be taken that nothing is used that may later become decomposed. Some exponents of hygiene demand that the street directions shall be such that sun in the buildings is assured. If the houses are built detached this consideration may be overlooked as each house may be so placed as to receive the sun. For building in closed rows Vogt advocates a north and south direction for the streets; from west to east is less desirable and most unfavorable of all are streets running diagonally to the points of the compass. On the other hand F. v. Gruber’s\(^\text{11}\) thorough investigation has shown that streets running from east to west and particularly houses fronting the north are to be avoided and streets running from southwest to northeast and southeast to northwest preferred. These considerations can of course have little influence on the directions of traffic streets proper; but they are important for residential and other side streets.

Social demands receive due consideration if the sanitary requirements are met, the construction of small and medium-sized houses on blocks of suitable dimensions in proper situations facilitated, and if playgrounds and places of recreation, also promenades, parks and gardens are provided.

The demands of beauty are not independent of all others. More than in other fields in city building beauty is perfect serviceableness. Variety based on technical understanding, the individualization of every street and every square, the contrast between the open and the closed, the combination of distance views and picturesque intimate street scenes, the avoidance of the convex in building line and street level, the successful choice of sites for monumental buildings, moderation in all the proportions, statuary and horticultural decoration and everywhere a certain harmonious, artistic conception – all this is offered in the beautiful modern city. A new city must look different from an old one; for conditions are different. Nevertheless the cities of the Middle Ages and the Baroque period offer us a wealth of ideas and models.

e) Different Kinds of City Sections

A metropolis consists as a rule of the following parts:

1) The inner city or old town, the middle of which is usually of a city called the heart of the city;
2) The newer quarters of the city also called the new city;
3) The adjoining outer city districts, still in process of construction, also called the outlying city or city extension;
4) The suburbs, consisting partly of old villages, partly of new residential and industrial settlements, the former being made up of villa districts and workmen’s colonies.

In medium-sized and small cities sometimes one sometimes another of these parts are lacking or are fragmentary; they are formed or supplemented as the population increases. And also within the four principal sections of the city there are different groups according to prosperity or occupation. As regards the latter special divisions may be made into: aa) wholesale trade and commerce, bb) the working population, cc) shops, dd) the manual trades, ee) that portion of the inhabitants that carry no special occupation at home (people of independent means, manufacturers, merchants, officials etc.).

Difficult and uncertain as it is to try to foresee the way in which a city will develop and the future grouping of its inhabitants, it is yet essential in making plans for city extensions to bear in mind that the different parts of the extended area will in the future be used for various purposes and to keep more or less definite purposes in view. If this were not done the city plan would be in danger of becoming merely an arbitrary network of lines with no real basis. In this respect the “Verbande Deutscher Architekten- und Ingeniurevereine” holds the following principle: “The grouping of different kinds of city districts should be brought about by a proper choice of their situation and other characteristics; it should not
be forced except where sanitary trade regulations make that necessary.” Instead of “choice of their situation” it would be better to say “consideration of their situation”; for in reality in making the plan of construction the question is not usually so much where certain classes of the population are to be accommodated in the future, as for what kind of buildings a certain area is suitable according to its position and other characteristics.

The vicinity of railways and waterways, where land is low in value (owing to its remoteness and the unattractive surroundings) and extensive plots that are little cut up – such places are suitable for the construction of factories and warehouses. Wholesale merchants and tradesmen are not obliged, as are those engaged in retail trade, to combine their dwellings with their shops, stores and factories.

The houses of the working population are generally grouped together in the vicinity of industrial plants and wholesale houses and like them should be built on cheap land. Though the formation of small workmen’s districts or workmen’s streets seems to be natural yet the herding together of workmen’s families at one point and their separation from the more prosperous portions of the community are by no means desirable. For sociological as well as for sanitary and economic reasons the mingling of the various classes of the populating is to be encouraged. In this way the more detached method used in building the houses of the well-to-do benefits the poorer people at least indirectly and it is a great advantage to a working family to live in a neighborhood where the different members of the family can find various occupations near-by.

The main traffic streets, that is the radial streets running out into the country and still more the inner radial lines, are the most suitable sites for shops. Busy and varying traffic is one of the first conditions necessary for shops. Nearest to the city gates are found the best sites for shops that have to do mainly with the country people; more towards the centre are situated the shops for more particular customers. The heart of the city is usually taken up by shops in all directions which sometimes occupy whole business districts.

In the Middle Ages whole streets or quarters of the city were frequently devoted to the trades and it was customary for men working at a certain trade to group themselves together. Old street names like “Löhergraben”, “Kupfergasse”, “Unter Hutmacher” etc. remind us of this segregation of the trades and classes that is no longer customary today. In modern places tradesmen are scattered all over the city among the other inhabitants. The best situation for them is indeed in the radial traffic streets; but they follow other classes of the population for whom they work, from whom they gain their living, into more remote parts of the city, into the manufacturing and workmen’s districts as well as into the finer residential sections. Although promenade and “luxury” streets are too expensive to afford suitable dwellings for tradesmen it is not uncommon to find craftsmen living on the ground floor or in the basement of a large flat-house the upper
stories of which are occupied by people of wealth. Not less frequently we find in cities with smaller houses that fine residential streets alternate with subordinate parallel and side streets where tradesmen find suitable dwellings.

For the last group of the population that seeks dwellings in which no occupation is carried on, and for artists, scholars etc. those areas of land divided by residential streets, lying between the traffic streets are suitable, as well as districts on the edge of the city that are distinguished by pleasant surroundings, freedom from unwelcome industrial plants, nearness to places of recreation and walks, and good connections with the inner city.

After what has been said it is clear that the groups are not and should not be kept sharply distinct from one another; there will always be a certain intermingling of the groups of the population and a mingling of these groups in the different sections of the city. The busiest outer radial streets for instance in all districts will always attract the shops and restaurants; the main ring lines will as a rule be the best and finest residential streets; factories and villas will be found in the suburban districts according to the situation of the latter.

The city plan not only can, it must take into consideration the peculiarities of these different groups. Factory districts must not be cut up into small blocks; the street system must be regular and the streets themselves must not be luxuriously treated or too wide. Workmen’s districts need small blocks, modest streets, special equipment with everything conducive to public health, particularly public playgrounds and trees. The business district requires carefully planned, moderately large building lots and numerous direct lines of traffic, especially diagonal streets. Quiet residential sections should have walks with trees, front garden plots, public garden areas of all kinds and, where single houses are the rule, the building blocks should allow plenty of space for private gardens.

According, to this it is essential that the architect that designs the city building plan should as far as possible obtain, from the given conditions, an idea of the kind of construction for which the projected streets are intended; it is not so bad if individual unavoidable mistakes occur, which can sometimes be corrected, as if the lack of necessary consideration revenges itself in numerous difficulties that might have been avoided, when construction is really in process.

A very attractive proposal for the grouping of the different sections of the city and of the classes of the population has been put forward and explained by Ludwig Hercher in his pamphlet “Grossstadterweiterungen” (Göttingen 1904)\textsuperscript{12}. According to Hercher our inner cities cannot “in their present changed condition, fulfill either the justified demand for the preservation of what is old, or form suitable places for the development of thoroughly modern cities”; traffic, modes of living and business life cannot be served in them as is desirable and the mounting of the price of land to dizzy heights in the heart of the city hampers development.

\textsuperscript{12} See: Deutsche Bauzeitung. 1905, p. 103.
and progress.” Even the newer quarters of the city and “the outlying districts of the large cities that have been built up in recent decades do not correspond to the demands that the present day rightly makes and must make as regards adequate, healthful dwellings for all the classes of the population, and the development of public and business life”. Finally, the suburbs, because of their remoteness from employment and pleasure and of the loud through traffic that traverses them, fulfill only a single one-sided need of life “and that in insufficient measure and not as perfectly as is desirable”. Hercher therefore proposes an ideal metropolitan city extension as shown in fig. 592\(^\text{13}\), which possesses the following characteristics:

1) the establishment of many groups of squares connected at a few points, with numerous public buildings facing them, so called “city centres”; 

2) the connection of these centres with one another by a few slightly curved, uninterrupted “remarkably wide main streets”; 

3) large districts between these main streets which are subdivided by numerous short narrow side streets whose course is unforced and natural.

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\(^{13}\) From: Deutsche Bauz. 1904, p. 648.
These three parts of the city extension are intended to correspond approximately to those in the inner city which contain the public buildings, the new and outlying city districts that are traversed by wide streets and the suburbs that are used for quiet dwellings or for industrial purposes. At the same time they present a strong contrast in their position and development to these districts of the modern metropolis. The illustration shows how the areas between the main traffic streets are to be used for dwelling houses, villas, workmen’s dwellings, also for parks and industrial structures, how even an old village can continue its existence on such a section and how the advantages of comfortable, healthy and quiet living can be combined with nearness to the place of employment, opportunity to shop, traffic facilities and all metropolitan achievements.

There are serious practical difficulties in the way of the realization of Hercher’s proposals; but they are in themselves so well thought out and attractive and the idea as a whole on which they are based is so sensible that they deserve not only approval on principle, but also application within the limits of actual conditions and possibilities.

The various parts of a city extension are prepared by the plan of construction and the building acts. These naturally exert a certain compulsion that may be useful but may also be harmful. The latter is especially the case if the foresight of the planner and the authorities later proves to have been erroneous. Thus we see, on the one hand, with what extreme caution the plan is to be definitely established and how on the other, the compulsion should as far as possible be replaced with a certain freedom. The building laws in this relation will be discussed in part IV, chapter 7; as regards the building plan we have already mentioned that it is indeed advisable to design certain parts of the plan but to postpone its legal establishment until the desire to build makes it necessary and then once more to examine the plan in the light of the later changes. But the owner of the land and builder may also be allowed a certain freedom without disadvantage, although the municipality is the lawful bearer of all the flush-lines. This freedom is not so much in place in determining the lines of the main streets but can well be permitted in the subdivision of the areas between them. If a municipality gives a land society, a building society, or a corporation or private individual owning property, the possibility and freedom to make building plans themselves, even to suggest building regulations, it may be that the whole city will gain in individuality and variety according to the artistic or technical power of the persons who make the plans.

It is clear that the general outlines are to be determined only by the municipal authorities and the state authorities to whom they are responsible. An important point of this kind is the question whether a certain area is to be built on at all or whether it is to be kept free for the public good, to be used either to drain off high water or as a park, meadow and woods. Legislation generally provides for the keeping free of high water profiles; for other purposes the land in question must
pass into the possession of the community or state by purchase or expropriation. The more the city expands the more important do the free areas in and about it become. Those communities are to be praised\(^{14}\) that have therefore made a point of buying up the woods in their environs, arranging them as places of recreation for their inhabitants and keeping them free from construction. And is to be hoped that other large cities will be moved to follow in the footsteps of Vienna that, at a cost of fifty million crowns is engaged in laying out a “woods and meadow” belt of 4400ha in extent all round the suburbs, at the same time preserving and improving such parts as already exist\(^{15}\). The belt consists of woods, meadows and parks that are connected by wide garden streets. Within the belt a “Höhenstrasse” is to be built that will afford magnificent views of the city and the Danube valley.

f) Building Over the Old City.

With the increase in the population and the city traffic grows unceasingly. The cities of the late Middle Ages and particularly those of the Baroque period are partly so well thought out and so extensive that they are even equal to the demands of modern traffic or at least require but few improvements. It is different with the cities of the early Middle Ages and the industrial villages and newer small cities that have gradually grown onto large cities or at least tend in that direction. In them it is necessary to widen streets and cut through new ones, and to improve levels.

For this reason plans for city extensions generally include the plan of building lines for the old city. But just as no larger city extension plan is necessary for a little city that is standing still or developing but slowly, so too in such a place the establishment of a general building line plan for the old streets is dispensable, in fact, disadvantageous. It is better in the rare cases where new structures are to be erected to examine this question of the building lines and to determine them, being careful to preserve the individuality of the place.

This method is no longer possible or practical however if the demands of traffic increase and now city sections are constantly being built up outside. Then, the whole old city must be examined in regard to the needs of the future and the establishment of a uniform, general building line plan so that they many new and reconstructed buildings on the old streets can conform to it and the opportunity to make necessary improvements in levels and to cut through new streets be not missed. But as with the plans for city extensions, so too the building line plan of the old city need only be designed for those parts where re-construction is not pressing and its legal establishment put off until it is necessary to use it when it should again be carefully examined.

Scarcely one of the larger cities of Germany has been able to avoid widening its old streets – at least where new structures were erected – and improving them, also cutting traffic streets through old parts of the city. In this process, as experience has shown, many

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\(^{14}\) For example, Elberfeld, Barmen, Duisburg.

\(^{15}\) See: Techn. Gemeindebl. 1906, Nr. 19.
Fig. 593
Street tunneling through Palais Royal

Fig. 594
Street cut throughs from west to east and south to north
Hénards proposals for street cut throughs in Paris
sins have been committed both in a practical and in an artistic sense. The principles that are generally acknowledged today for the alteration of old streets, squares, and city districts, have already been discussed in chapter 8, of the last part.

Most has been accomplished in the way of cutting through streets in the cities of Paris, London, Brussels, Budapest, Naples, and Rome, though not always in an exemplary way. The greatest activity in this direction was exhibited in Paris, that, after the comprehensive changes that it had undergone under Napoleon III and under the second republic, is now apparently about to enter on a third period of reconstruction, not because the former alterations have not proved satisfactory but because they are still inadequate to fulfill the demands of the growing traffic in the metropolis on the Seine. The plan of the architect E. Henard for a cross made up of new main streets of 35 and 40m in width, to be cut through the heart of the city, is shown in figs. 593 and 594. The convergence of the traffic lines at certain points that is also noticeable in these illustrations as well as the lack of effort to avoid acute-angled and very small building blocks, is, as we have already emphasized, a peculiarity of modern French city building.

Fig.595
Bird's Eye View to Fig. 593 and 594

The second cause for the reconstruction of old parts of the city is public

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16 From: Deutsche Bauz. 1904, p. 596.
sanitation. If a confused network of narrow, dark lanes densely lined with old structures lies outside the sphere of traffic, if therefore there is no reason that would impel owners voluntarily to erect new and improved buildings in it, such miserable and permanent housing evils grow up that only energetic interferences is able to remedy matters. The case is similar when an old part of the city is exposed repeatedly to floods and only a general raising of the land is able to remove the cause and prevent its evil results. We shall discuss such cases more fully in part IV, chapter 3.
PART III

CHAPTER 4: Modern Examples of New City Sections

The discussion of several modern plans and designs, some of which have been carried out, will illustrate for us the present-day development of city building. At first some new city sections are given which are followed by more extensive plans of construction. The city sections may be divided into:

a) Construction on the site formerly occupied by fortified walls;

b) City sections which are built up mainly in closed rows and blocks

c) Villa districts; and

d) Factory districts.

a) **City Walls.**

The land formerly occupied by city walls is today so frequently used for building when alterations are made that the landscape architect is no longer able, as formerly, to turn it to account. For economic reasons nearly the whole of such land is required for building purposed so that its treatment as a landscape is not indeed to be neglected but still must become of secondary importance.

Examples of the manner in which the sites of walls were formerly turned into city promenades are shown in figs. 596 and 597 in Frankfurt a. M.

Fig.596 and Fig. 597 parts of the ring in Frankfurt a.M. in between Taunus and Eschenheimer Tor
The destruction of the walls always affords an opportunity to lay out one or two ring streets. A single ring street, on the site of the former Glacisweg on the outer side of the walls, is found in Frankfurt a. M. On the side towards the old city the public park girdle bounds the gardens of private properties, the use of which for construction is limited, the houses on these properties face another, approximately parallel street.

The most common treatment is to add a new (outer) ring street to the old (inner) wall street, thus forming a double ring line. In Bremen the double line consists of the Wallstrasse and the Glacisstrasse (Kontereskarpe), between which extensive hilly gardens and broad ornamental bodies of water remind one of the former walls and ditches; on the outer side of the Kontereskarpe stand pleasant residential blocks occupied by private houses. This landscape treatment of the wall promenades affords beautiful sites for monuments and public buildings as Frankfurt a. M. and Bremen show. In both places for instance, the theatres have found places on those beautiful ring lines. Similar arrangements are found in Leipzig, Braunschweig, Posen, Glogau and elsewhere.

For the landscape treatment of the zone in which the walls formerly stood Frankfurt a. M. and Bremen are still models; therefore the illustrations given here have been included among the “modern” examples. The new part of the outer ring promenade in Frankfurt, called Hohenzollernplatz and Viktoriaallee, and illustrated in fig. 599 is really thoroughly modern. The
form of the beautiful garden area was partly determined by the desire to keep a free view of the Taunus in the given directions. A considerable number of monumental buildings have been combined here with stately effect. Admirable as the park is,

![Fig. 599](image)

the long convex building line still remains undesirable.

From the site of the fortified walls in Glogau we give in fig. 600 the sketch of a park block partly surrounded by buildings which was laid out because of the desire to preserve the two old allees. The private gardens are to have gates into the park which will thus become a sort of inside park. (Compare part VI.)

Fig 601 illustrates the city extension plan of Metz which is now being carried out. To the old Wallstrasse is added in the usual way the ring street that is decorated with vegetation; the street system has many good points though a reduction in the number of diagonal streets and a better arrangement of the traffic centre in front of the new main railway station would be desirable.

In a similar way the Wallstrasse and the Ringstrasse supplement each other in the city extension plan of Posen, of which fig. 602 presents a section. Attention may be called to the squares about the old Carmelite church, to the Eichwaldtor which is to be preserved and to the termination of the new bridge across the Warthe.

The plan of the construction of the encircling belt in Königsberg (fig. 603)

Fig. 600
from the construction plan of the remodeling of Glogau
shows lines that are mobile and full of variety caused mainly by the desire to preserve existing garden areas and to avoid using certain water ditches for construction. An ornamental stream flows though the new Ringstrasse. The old Wallstrasse on which runs a small railway has been done away with at the eastern end so as to gain space for the extension of the barrack ground. Suitable sites were also obtained for a court-house, a group of church buildings and an administration building.

Finally fig. 604 shows the plan for connecting the parts of the Ringstrasse which follows the line of the old city wall and adjoining building blocks in Aachen. These parts were formerly separated by the railway station to Templerband. The street beside the new railway line is bridged over by the Ringstrasse.

Fig.601 from the city expansion of Metz

Fig.602 from the construction plan for walling in Posen
Fig. 603
from the construction plan for the northwest front in Königsberg
Fig. 604
New connecting link on the ring in Aachen
b) Closed City Sections.

Modern sections of the cities that are to be built up entirely or chiefly in closed rows are illustrated in figs. 605 to 611.

In the new section of Munich (fig. 60518) we see how, though the blocks are almost regular in form, well thought out irregularities in the lines of the streets and squares have produced a pleasing richness in city views. Especially worthy of notice are the views of the concave sides of the Sanatorium and Longobarden streets and the terminal views of the walls of the Anthari and the Theodolinden squares. The plan of the new part of Munich in fig. 606 shows, in the position of the St. Josefskirche, in the beautiful arrangement of the Josefsplatz in the lines of the streets A B C and C D, altogether in the distribution of space, the most remarkable contrast to the adjoining geometrical district dating from an earlier period.

![Fig. 605 from the city expansion plan for Munich](image)

In fig. 60719, illustrating a new city section in the outlying portion of Breslau, notice should be taken of the great (perhaps too great) irregularity of the lines of several streets, the attractive subdivision of the building blocks and the inside park which may be entered from three streets.

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The new part of the city about the electoral palace in Mainz (fig. 608), which was carried out according to the design by F. Pützer that won the prize in a competition that was instituted for this purpose, is distinguished especially by the monumental, beautifully enclosed Ernst-Ludwig-Platz, the picturesque lines of the broad street that leads from there to the Christuskirche and the indirect introduction of the diagonal street across from the Realgymnasium.

In the plan of a part of Flensburg (fig. 609) the way in which the system of streets is joined onto the diagonal country road (Kupfermühlenweg), and the arrangement and connection of the two squares should be observed.

Fig. 610 shows how the land formerly occupied by a railway station in Wiesbaden is to be built up. The Wilhelmatrasse runs in a curved, the Nikolasstrasse in a straight line to the new railway building; an irregular city district is to be introduced between the villa district on the one side and the rectangular section on the other.

A new outlying district in Waldenburg (in Silesia) is illustrated in fig. 611. A new City quarter in Munich

Attention is called to the way in which the side streets enter the market-place and the garden area, also the slightly curved lines of the streets and their convergence at the two traffic centres.

A main street that is very rich in variety is the distinguishing feature of a new city section in Södertelje (in Sweden) (see plate opposite page 278); the squares are also worthy of notice.

c) Villa Districts

In almost all the modern villa districts we find freer lines and more curved forms than in sections that are built in closed rows. The blocks do not need to be so regular in form because the buildings are detached; as a rule squares and the creation of space become of secondary consideration; landscape treatment on the other hand becomes of great importance.

Fig. 61221 shows a better residential section adjoining an older geometrical district in Kiel.

The outlying district of Darmstadt shown in fig. 613, designed by Pützer, is rich in beautiful views of streets and squares.

The same striving for variety in appearance underlies the plan of construction of the Kämmereiwiesen in Wismer fig. 614; the closed framing of the squares and the concave building lines that result from the given position of the buildings back from the street fish-like should be noticed.

Very winding lines characterize the villa districts Hungerberg in Vienna (fig. 61522) where it was necessary to use extremely hilly territory for dwelling houses (also a school and park). Conditions are similar in the district about the “Grossen Mühlenteich” in Flensburg where a residential section is planned (see accompanying plate). We have to do in this case, as Gurlitt writes in the book mentioned below23) with the dividing up of a valley at the bottom of which a lake lies. The view from the city across the lake of a recreation building standing on a hill was of importance and a straight line leading to it has rightly been introduced instead of a curved one. It is not to be expected that much traffic will pass

23 In: Wuttke. Die desutschen Städte etc. Leipzig 1904.
through the valley itself; the main streets run along the side past the valley which is to serve as a quiet residential section.

d) Factory Districts

A modern factory district is also included among our examples. For this purpose we have chosen Landau (fig. 616) because the industrial district there shows the different kinds and positions of the connecting railway tracks: the position in the inside of the blocks and on the open street, service by means of switches and turn-tables. Though the inside position of the tracks and the connection by switches is a necessity for large plants, the tracks on the street are by no means rare; in the hands of the municipal authorities such a position has the advantage of being more easily established because the streets are public property or are obtained by expropriation and can without difficulty be laid out of the proper width for tracks. The connection of the factory tracks by means of turn-tables makes it more difficult to deliver and receive the cars but requires a minimum of space and can be carried out almost anywhere.

Fig. 608
Mainz (draft Pützner)
Fig 609
from the construction plan of the northern part of Flensburg

Fig. 610
construction plan for the former area of the railway station of Wiesbaden
Fig. 611
Construction plan for the new suburb of Waldenburg

Fig. 612
Anschlufs eines besseren Wohnviertels an einen älteren Stadtteil zu Kiel.

Fig. 612
connection of an old quarter to a new residential area in Kiel
Also more extensive building plans need to be divided into those that are intended mainly for building in closed rows, and those that are designed for villa-like settlements.
Fig. 614
construction plan for a suburban quarter in Wismar
Fig. 615

Villa district Hungerberg in Vienna
a)  **Plans for building in closed rows.**

If we begin with the extension plans of Altona and Dessau, illustrated in figs. 617 and 618, it is because they, dating from the nineties of the last century, belong to the first period of development of modern city building: fig. 617\(^{24}\) with strong accentuation of the traffic lines with rich formations of the streets themselves and of their distant views; fig 618\(^{25}\) on the contrary with less pronounced traffic lines, fine groups of squares and intimate street views – a difference that is based partly on the difference between a metropolis and a medium-sized town and partly on the varied conceptions of different persons.

A mingling of the two conceptions confronts us in the extension plans of Diedenhofen and Marienberg. In Diedenhofen (see accompanying plate) in spite of the pronounced traffic lines we find also smaller street views and squares. (The two cross streets that are extended outside by dotted lines have a purely military significance.) In Marienberg (fig. 619) we find several long straight traffic streets among them a decided diagonal line, but many modest picturesque side streets as well, a beautiful group of squares about the church (compare fig. 508) and a stately square in front of the Rathaus. A peculiarity is the preference shown for hook-shaped residential streets and for very extensive blocks the insides of which are intended for public uses. The building line at the southern end of the diagonal street is set back without affecting the traffic thus gaining fine terminal views for the street looking in both directions.

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\(^{24}\) From: Deutsche Bauz. 1891, p. 321.

\(^{25}\) From: Deutsche Bauz. 1891, p. 321.
In fig. 620, a portion of the city extension in Brünn, attention is called, among the main traffic streets to the one that runs in the long direction near the middle of the plan with a concave south wall and a retreating north wall, also to the surroundings of the church, the position of the other public buildings, the traffic centres at A and B and the manner in which, at C and D, the streets that have been introduced to divide the land in the long direction, branch off from the country road.

Most attractive and rich in beautiful forms and in the terminations of streets and squares are the building plans of Friedberg and Pfersee near Augsburg of which sketches are given in figs. 621 and 622. If these places were large cities a somewhat more pronounced development of the traffic lines would be desirable. The formation of the blocks is practical, the placing of the schools and similar buildings in the inside of the blocks has the advantage that such sites are cheap but is disadvantageous in that they cannot be used to
Fig. 619

city extension of Marienberg  
(draft by C. Sitte.)

1,2. Innerparks 3. Inner marketplace 4,4,4. reserved inner areas for public and commercial purposes

The old quarters are more hatched
heighten the effect of the streets and squares.

The building plan of Kufstein (fig. 623) is distinguished by a similar richness in forms. Particularly worth of notice are the three neighboring city squares, the treatment of the corners of the squares and streets, the graduated offsetting of the building line in curves. The southeastern part of the city extension is intended for detached building; the course of the brook inside the building blocks is therefore permissible.

Finally in figs. 624 and 625 two foreign modern city building plans in Belgium and South America are sketched. The plan of Zeebrugge, although not free from geometrical lines, shows German influence, whereas the Americans, for the present at least, seem to be entirely governed by patterns.

b) Plans for Detached Buildings

Settlements in which the houses are built detached or semidetached are usually erected as bathing or health resorts, suburbs of large cities or as colonies for the officials of large industrial plants. The English idea of building independent
garden cities which are to combine the most modern ideas in factory building and dwelling houses has indeed found much favor on the Continent. But though such cities would be most desirable for social and sanitary reasons the idea has not yet been successfully carried out. The reasons for this may probably be found in the fact that such cities are built on principle away from the large cities thus involving the lack of certain intellectual and material advantages, in the principle of community of ownership, and in the intention to build all the houses detached, a method that,

Fig. 621
construction plan for Friedberg near Augsburg
draft by P. Andr. Hansen
for some needs, is not as practical as building in closed rows.

Fig. 627 shows the outline of the resort on the coast of the East Sea, Travemünde. A distinction must be made between the original settlement consisting of the Kurpark and everything belonging to it with the broad Kaiserallee that runs in a straight line parallel to the shore, and the extension that adjoins this portion and stretches inland in winding lines.

Fig. 622

construction plan   Pfersee near Augsburg
1. churches 2. schools 3. Castle 4. community houses
The colony of country houses in Cobenzl near Vienna, interspersed with parks and vineyards, shows still more attractive and varying lines in the street system (see accompanying plate). The deep curves are necessitated by the mountainous character of the country the horizontal lines of which could not unfortunately be indicated owing to the small scale on which the plan is drawn.

On the accompanying plate, the villa colony Buchschlag near Frankfurt a. M. the building flush lines should be especially observed (compare fig. 614 in Wismar); they do not run parallel to the lines of the streets and are concavely curved in many places; also the squares which in spite of the fact that the houses are built detached, are framed in an attractive way and more or less closed to the lines of vision.

The great charm of the building plan of the settlement for officials and workmen in Streiffeld near Aachen (fig. 626) consists in the careful disposition of the streets, the difference between wide and narrow streets and the interesting squares. Highly remarkable and picturesque in effect is the peculiar manner in which the buildings are set back at the block corners and the stairway-like deviation of the building flushlines from the lines of the streets; unfortunately the breadth of the building blocks between the country road and the next
Fig. 625
district of Montevideo
1. central station 2. university 3. government building 4. theatre

Fig. 626
construction plan for Streiffeld near Aachen
Fig. 627
Sea resort Travemünde
draft G. Schaumann
parallel street is only great enough for single, not for double, building lots.

Finally, Port Sunlight near Liverpool, a section of which lying nearest to the factories is illustrated in fig. 628, is remarkable for the great area it covers and for the charming landscape groups it contains. The houses are built in groups adjoining one another; the inside of the blocks is planted with vegetation and serves at the approach to stables and yards. Extensive plots are used for parks and playgrounds or are divided into kitchen garden which are let to the occupants of the houses.

Fig. 628
worker's colony  Port Sunlight