Architecture of the 19th century and the Turn of the century

(handout)

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Different periodizations in different countries and eras

The topic of this semester is the **19th century architecture**. Actually it is a longer period in the history of architecture than a century that is why it is called the 'long 19th century'. In this era the architecture and the art turned to the past, to the previous styles using them in a new approach. Our period began in the mid 18th century and ended in about the second decade of the twentieth century. The period was divided into different eras, but these periodizations were different in different countries and eras.

The **period 1750 to 1870** was an era of changes and architectural evolution on all fronts. Architects reflected the social ferment in both a return to the styles of past eras and a highly innovative search for means of expressing new ways of thinking and living. Archaeologist-architects like James Stuart and Nicholas Revett measured and drew the classical buildings of Rome and Greece and carried their findings home for reuse in every sort of structure, from church and house to garden ornament. Yet in the same era some architects like Étienne-Louis Boullée and E.-E. Viollet-le Duc turned away from the past toward an abstract architecture of the imagination and toward an architecture that would suggest to twentieth-century architects how they might abandon Historicism and evolve a new style for the future.

These very different intellectual currents produced a wonderfully diverse body of architecture, ranging from town and country houses, palaces, and public buildings in series of styles – Greek, Roman, Etruscan, Gothic and Renaissance and so on.

The successful architects were too busy with new trimmings for façades to notice that every new type of building required its own treatment. Sir George Gilbert Scott (1811-1878), an honoured architect of the High Victorian era stated that the great principle of architecture is 'to decorate construction'. Even John Ruskin, an English theorist said in 1853: 'Ornamentation is the principal part of architecture'.

The architects of the 19th century searched for their own style, but they searched for it between the previous styles. The great German architect Karl Friedrich Schinkel formulated this when he wrote in 1841: 'Each period has its own architectural style, why haven't we established our own?' 'The great question is: are we to have an architecture of our period, a distinct, individual, palpable nineteenth-century style?', asked Thomas Leverton Donaldson, the first professor of architecture at University College, London, in 1847. What had happened was that nineteenth-century architects had discovered the history of art and artistic liberty at the same time. New experiences emerged throughout the century. The styles existed side by side instead of succeeding each other.

The architecture as an activity is about 5000 years old, but the field of the **History of Architecture** is only 250 years old. The History of Architecture developed in the 19th century similarly to the science of History. The first important book in the History of Architecture was written by Joachim Winckelmann in 1764, its title was *'The History of the Art of Ancient Times'*. From this time onwards the period or the architectural style can be called Historicism. This book and the increased interest in the art of the historical periods took part at the start of the historicization.

Historicization in architecture or to historicize means to revive and to use historical, architectural forms or details. Historicization has been present in the architecture continuously. The period, when it was used consciously and deliberately, is known as the period of **Historicism**. This period began in the middle of the 18th century and continued until the first decades of the 20th century. (It was about 1750 to 1920.)

The claim for historicization arose, when the society in the Baroque period changed to a civilian one. The civilians came to power. They not only had economical but also political power. The citizens looked for their new architectural style opposite the Baroque style. The civilian society and arts of the Ancient classical civilizations became important. In this period not only did the Roman architecture became known and recognizable for the educated but Greek architecture did too. In Renaissance times the Turkish occupation of Greece made it impossible for Europeans to get to know and study Greek architecture.

The most important problem of Historicism was the **continuous expansion** of the scale of buildings. In the 19th century the buildings were becoming gradually bigger and bigger in size. In the course of the 19th century the architects tried to find newer and newer historical styles to form the façades of their buildings. The idea of eclecticism was that the façade of the building consisted of units. For example, the Houses of Parliament in London, which kept the old Gothic features, resembles a medieval city, including a medieval town hall, market place, cathedral, castle, etc. The façades were independent from the interior or from the function. A contradiction between the façade and the interior developed.

The period from 1750 to 1910 is a very difficult period. What is common in this era that the architects used the architectural details and motifs of the earlier historical styles. In the 20th century famous art and architecture historians tried to divide the period into different eras. These periodizations are different and have changed not only in the course of the century, but they are different in different countries.

This tabulation summarizes the changes in the aspect of the history of architecture and makes a comparison between them. The tabulation shows the complex development of our period and also the development of the changes of the aspects.

<table>
<tr><td></td><td>Theory
at the beginning of the 20th century (German)</td><td colspan="2">Theory
in the middle of the 20th century (French-English)</td><td>Theory
at the end of the 20th century (Austrian)</td></tr>
<tr><td>Until 1750</td><td>Baroque</td><td colspan="2">Baroque</td><td>Baroque</td></tr>
<tr><td>From 1750 to 1800</td><td rowspan="2">(Neo-)Classicism
(early; flowering)
(Landscape gardening, Neo-Greek, Greek Revival)</td><td>Romantic Classicism</td><td rowspan="3">Active Romanticism</td><td>Naive Historicism</td></tr>
<tr><td>From 1780 to 1830</td><td>Classicizing Romanticism</td><td rowspan="2">Pure-in-Style Historicism</td></tr>
<tr><td>From 1770 to 1840</td><td>Romanticism
(Neo-Romanesque, Neo-Gothic, Gothic Revival)</td><td>Romanesque Romanticism
Gothicizing Romanticism</td></tr>
<tr><td>From 1840 to 1890</td><td>Eclecticism
(Neo-Renaissance, Neo-Baroque)</td><td>Historicism</td><td>Passive Rom.</td><td>Style-mixing Historicism</td></tr>
<tr><td>From 1890 to 1910</td><td>Art Nouveau / Secession
(European Art Nouveau movement)</td><td colspan="2">Turn of the 20th century</td><td>Turn of the 20th century</td></tr>
<tr><td>From 1910</td><td>(International) Modern
(twentieth-century style)
(today’s style)</td><td colspan="2">Pre-Modern</td><td>Pre-Modern</td></tr>
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In the second column the oldest, the traditional, art history periodization can be seen, which was used at the beginning of the 20th century. It was used mostly in Central Europe, were the styles came sooner after each other, and not parallel to each other as in Western Europe.

After Baroque, from about 1750 Neo-Classicism followed, when the architectural taste turned to the calmer architectural details of the Ancient Greece or Rome, to the classical vocabulary. The name of Classicism also originated from the Latin language and refers to the classical Ancient art and architecture. But only the English terminology uses the ‘Neo-‘ preposition before Classicism. In German or in Hungarian the books write only Classicism, or ‘Klassizismus’, opposite to Neo-Classicism used in England or in the U.S.A.

The transition from Baroque to Neo-Classicism happened gradually. The architecture developed in an unnoticed way, step by step from the Baroque architecture. The geometry and the antique forms displaced gently the unbound, arched Baroque and Rococo forms. After the middle of the 18th century, there was also criticism of Rococo, whose undisciplined frivolity was contrasted with the ‘belle simplicité’ of Antiquity. The architectural details and motifs became gradually calmer and simpler to approach the classical ideas. The last phase of Baroque, the classicising late Baroque existed together with **early Neo-Classicism**. The buildings of the Late Baroque (or Rococo) were built in the same time with the buildings of the early Neo-Classicism. The only difference between them is given by their effect to the following architecture.

At about 1750 the archaeological revival (which was the discovery of ancient Greek art and a new feeling for the architecture of Imperial Rome) and the return to nature fostered the emergence of a new architectural idiom. In this idiom certain features recur constantly: clear-cut lines, monochrome surfaces, simple masses, antique archetypes (which are tholos, temple, peripteros, pantheon), elementary geometrical forms (which are cube, sphere, pyramid, cylinder), contrasts emphasized by light and shade, regular colonnades and porticos contrasting with great bare walls of simplicity, and finally cupolas and barrel-vaults.

In these early times, in the mid 18th century the architects did not know precisely the ancient, classical forms, they could not use these forms properly as in ancient times. Instead of the knowledge of the ancient architecture, the Puritan view caused the changes in the Baroque architecture, which resulted in more simple façades.

This style laid out the buildings together with their surroundings. Beside early Neo-Classicism landscape gardening, a new type of garden had architectural influence. The Neo-Classical buildings with their simple, geometrical forms were contrasting with the surrounding landscape garden. The symmetrically planned Baroque garden-architecture did not succeed, the gardens were more natural. The name of this garden-architecture, designed naturally, is referred to as 'English garden'. In these gardens a Baroque axis cannot be observed anymore but some irregularly winding paths, groves, lakes with fountains, garden houses and pavilions, rounded temples, statues are laid out amongst the naturally grown, picturesque plants and clumps of trees.

In the **flowering of Neo-Classicism** the architects could already study the classical buildings and motifs in books. Architects too, and even country builders, knew by 1760 enough of the orders and the details of antiquity to be able to reproduce antique buildings or ruins. The period is also mentioned as Classical Revival or Greek Revival or simple as Neo-Greek.

Romanticism appeared after Neo-Classicism in about 1770, but in some countries they were used parallel to each other. The name of Romanticism originated from the French word 'Roman' that means 'novel' and has not to do with the Roman Empire. The attribute 'romantic' is used in this meaning in everyday language: it means something that is exciting like a novel. In the period of Romanticism the architects turned to the medieval styles, to the Romanesque and Gothic styles, using semicircular arches in the Neo-Romanesque or pointed arches (or ogives) in the Neo-Gothic style. Contrasted with the medieval façades and picturesque shape, the interiors of these buildings are sometimes built in classical form.

Opposite Neo-Classicism the Middle Ages became the ideal of Christian civilisation. The thought of the connection of Christianity and Gothic came into architectural theory and practice. And from another point of view the Gothic style was seen as a national historical style in contradiction to the international Classical style. Very soon each European country claimed Gothic as its national architecture.

On the other hand the classical style was particularly well suited to public buildings and Gothic style to religious buildings. This idea constantly recurred throughout the 19th century. In religious architecture there was confrontation between the two models for churches, between the Early Christian basilica and the medieval church. In secular architecture, the free taste of the owners gave reins structurally to more styles.

In the Romantic period there were also motifs and details of distant civilizations used as some buildings were designed here in Europe in Byzantine or in Indian style or in Chinoiserie. Chinoiserie is a style in art that reflects Chinese influence through the use of elaborate decoration and indicate patterns.

Sometimes Gothic cathedrals and antique temples were set side by side. In parks crenellated towers and ruined chapels flanked Chinese pagodas and little Greek temples. The style of the second half of the 18th century is generally represented by a Chinese bridge, a miniature Pantheon, and a Gothic ruin, all by each other not only in garden architecture but in other aspects of architecture as well.

Before this picturesque Romantic Gothic could be transformed into the Gothic Revival, the Middle Ages had to replace antiquity as the ideal term of reference. Medieval archaeology had to provide working instruments as refined as those of ancient archaeology. Until the first decades of the 19th century this ideological revolution got under way, along with the gradual

development of archaeological research. Two phases can be clearly distinguished: in the first of these the Gothic style was at best an alternative to the ancient style. Medieval motifs were retained for their symbolic value and picturesque qualities. In the second the Gothic style was claimed to be a substitute for the ancient style. The second phase began when the progress made in archaeology in each country enabled an architectural content to be given to medieval Romanticism.

The difference between Neo-Gothic and original Gothic was economical and technical. The imitative Neo-styles copied the historical details with archaeological knowledge, but the buildings behind these façades performed the contemporary functional programs and were built with contemporary structures.

When the struggle between Classicists and Gothicists began to subside, other styles took their place. The architectural knowledge of the architects sharpened and on the whole their imitations grew in sensitivity as the century progressed. In the years from 1830 to 1840 the eccentric taste of clients and picturesque and historical associations remained determinative, but the new scale of architecture and the number of buildings erected show that a new phase was also starting.

In the 1830s and 1840s new Neo-styles appeared in the architecture, Neo-Renaissance and Neo-Baroque. From the appearance of Neo-Renaissance the next period is called **Eclecticism**. From these times the approach to the classical tradition underwent a renewal. Attitudes toward a monotonous Neo-Classicism began to cool. The grand style of the Italian High Renaissance palazzi replaced the simplicity of the Neo-Greek. What helped to popularize the Renaissance style must have been its high relief against the flatness of Neo-classical.

By 1830-1840 a new social and aesthetic situation developed in architecture. Architects' clients came from the middle classes. The new manufacturers or merchants felt no longer bound by one particular accepted taste. If they liked a style in architecture, then they had a house or a factory or an office building built in that style. Architects believed that anything created by the pre-industrial centuries must be better than anything made to express the character of their own era. Architects' clients wanted other than aesthetic qualities, and they could understand and even check one other quality: the correctness of imitation or proper imitation. That was due to a thorough historical knowledge, which characterized the 19th century. Architectural scholarship concentrated on historical research. Architects were able to draw from a well-assorted stock of historical details.

This period was called Eclecticism, which is sometimes claimed to be the style of the 19th century. The name originates from a Greek word, which means choosing according to quality. The architects were choosing between the styles, and sometimes they also mixed different elements. The façade became only a dress; the architects could change it without changing the ground plan.

The beginning of the eclectic period was when the architects turned to the Renaissance style, instead of the classical or the medieval forms. The Neo-Renaissance style was followed by Neo-Baroque, then the architects began to select from all of the previous historical styles again. So the fancy-dress ball of architecture was in full swing. By 1840 pattern-books for builders and clients include more styles. That does not, however, mean that during the 19th century all these styles were really used. Favourites changed with fashion. The architecture became the coming and going of period styles. The circle of imitation had expanded to include the whole domain of architectural history.

Thomas Leverton Donaldson, the first professor of architecture at the London University College wrote in 1842 that ‘there is no style which does not have its particular beauties; there is no fixed style now prevalent; we are wandering in a labyrinth of experiments’. The changes on different styles depended on the inspiration of the site and the tastes of the owner, with the archaeological skill of the architect, required while restoring old castles.

The term eclecticism encompasses two different phenomena. On the one hand typological eclecticism might be called, when the architect turns to one model or another in the past, which he adapts and modifies to meet his needs, depending on the specification, on the character that he wishes to give to his design. On the other hand synthetic eclecticism is when the architect has recourse to past architectural experience in order to combine in a novel

manner the principles, solutions and motifs of different periods. And this synthesis can take a field of greater or lesser extent for its operation.

In accordance with the typological eclecticism there was a kind of distribution according to types and styles. Neo-classical style was particularly well-suited to public buildings such as museums, law courts, and Neo-Gothic style to religious buildings such as churches and mausoleums. This idea constantly recurred throughout the 19th century. Greenhouses, covered markets and halls, exhibition pavilions, passages and utility buildings were built in a modern iron or steel style, churches and vicarages in a medieval, Byzantine, Roman or Gothic style, public buildings and apartment blocks in a classical Italian or French Neo-Renaissance style. This typological eclecticism is based most often on the fascination exercised by an archetype – the 13th-century cathedral, the small medieval parish church, the Italian palazzo, the Netherlands town hall and so on. In suburban villas and apartment blocks the variety of the styles used is part of a generalized picturesque variety, but the stylistic variety in buildings of a more elaborate type is a conscious, significant variety. These different historical styles can serve to orchestrate the different parts of composition.

This architectural culture, which was already extremely rich in the middle of the century, continued to take on different shades and forms until the end of the century.

After 1850 this eclectic architectural culture favoured an intermingling of styles in all the European countries. It led to changes in the **styles of the turn of the 20th century**, when the art and also the architecture searched for new ways instead of using historical architectural elements or motifs. These movements against the Historicism at the turn of the century were different in different areas, and had also different names. In England it was the Arts and Crafts movement, in France and in Belgium Art Nouveau, in Germany Jugendstil, in Italy Art Liberty or Art Floreale, in Austria and in Hungary Secession. But in some books these names were used not only for a specific area. Art Nouveau was used in a wider sense; all of the European styles at the turn of the century were called Art Nouveau. They all belong to the **European Art Nouveau movement**. Here in Central Europe **Secession** became such an overall name of the turn-of-the-century styles.

Afterwards in the first quarter of the 20th century buildings without decoration or ornaments were erected. Only the function determined the form of the buildings. This new period became known as **Modern** or **International Modern**, in other words twentieth-century style or today's style.

The art-historical judgement of the period changed and the third column of the tabulation shows another periodization, which originated in the mid-twentieth century. This was used mostly in French and English areas. In this column Romanticism in not a style, but an attitude, artistic process. So Romanticism has two meanings: the first, the older meaning belongs to the historical periods, it means 'to use medieval forms', as in the second column. This definition of Romanticism is according to the traditional history of art system. The second meaning of Romanticism is more modern. According to this, all 19th century styles belong to Romanticism.

The first or the early period of Neo-Classicism was called **Romantic Classicism**, which corresponds to early Neo-Classicism. The attribute 'Romantic' shows that this Classicism was still uncertain; the architects could not use the classicist elements, forms and motifs properly or with certainty. The knowledge of the ancient architecture was still unsure.

Flowering of Neo-Classicism belongs to Romanticism in this column. Here Romanticism has three forms of its appearance. The Romantic Movement had several expressive attitudes. **Classicizing Romanticism** is when architects used classicist elements, **Romanesque Romanticism** when they used Romanesque motifs and **Gothicizing Romanticism** when they used Gothic details.

These styles existed parallel to each other. In this period the architects could express themselves in different styles. For different tasks they used different styles. For example, the great German architect, Karl Friedrich Schinkel, who designed buildings between 1800 and 1840, was also a Neo-Classical and a Neo-Gothic architect. It was not rare that an architect used parallel Neo-Romanesque or Neo-Classicist forms. For the Walhalla near Regensburg

Leo von Klenze, another famous German architect proposed two designs for one and the same project: a variation on the Parthenon in Athens and a Neo-Gothic design. For the Glyptothek, a museum in Munich the same architect even suggested three designs, respectively in Greek, Roman and Italian Renaissance style. Indeed, Sir Gilbert Scott, in spite of his Neo-Gothic convictions, had to adopt an Italian style in order to retain a commission.

In this periodization **Historicism** corresponds to Eclecticism. In this period all of the Neo-styles were used. The buildings became more academic, more mechanical, more boring. They seemed to be designed by routine. Never before had cultural, political, social, regional and national contrasts been stated in architecture as deliberately as in that time.

In other art books other periodizations are used. According to one of them the whole period is Romanticism. The first period, between 1750 and 1850 was a progressive, individual era, that is why it is Active Romanticism (it is Neo-Classicism and Gothic Revival), but compared with it the period between 1850 and 1900 was Passive Romanticism (it is Eclecticism or Historicism).

In the third column the summarized name of **'the Turn of the century style'** is used, instead of the European Art Nouveau movement. Instead of Modern **Pre-Modern** is used, because there was a different period preceding the International Modern movement when some historical motifs or references still appeared in the designing.

The fourth column contains the latest periodization. Here all of the 19th-century styles belong to **Historicism**. Actually our whole period revived and used again the historical styles thus this was the century of Historicism. The first phase of it was Naïve Historicism, which corresponds to early Neo-Classicism or to Romantic Classicism. In this phase the historicization was still uncertain, the architects could not use the elements, forms and motifs of the historical architecture properly. The knowledge was still unsure.

Here the next period is Pure-in-style Historicism, which corresponds to the flowering of Neo-Classicism and Romanticism. The name shows that in this period the knowledge of the historical styles became thorough, and the styles appeared with correct proportions and details.

Style-mixing Historicism corresponds to Eclecticism and to Historicism in the previous columns. The name expresses that the historical styles that appeared in this period mixed with each other. The mixed motives derived from different styles and different centuries. This is a small mistake in this periodization because there were also pure-in-style buildings built in the second half of the 19th century, not only style-mixing ones. The 'Turn of the century' styles and Pre-Modern is the same as in the previous column.

New structures and materials in the architecture

Beside the question of styles, the 19th century is an important period because a rapid development began in architecture in the field of structures in this period. Greenhouses, covered markets and halls, exhibition pavilions, passages and utility buildings were built of iron and steel. At that time some people believed that the new industrial civilization would give birth to new architectural forms. They had high hopes of the newly introduced materials – cast and wrought iron, glass and concrete. Since they brought a visible break with past methods of building, they might be a precedent of a new architecture. But in the 19th century neither cast iron nor concrete could define a form, since they were capable of being fashioned into different shapes. Then it was no more natural to leave these materials exposed than it was to cover them up.

Wood and stone were the two natural materials, which were available to architects up to the beginning of the industrial age. In addition there were tiles, which were not really natural building material. Whereas wood and stone, which are worked upon only by hand or by machine, keep their original consistency, iron and concrete are produced by industrial processes.

Iron began to qualify as a building material only when it became possible to mass-produce it to a reliable standard of quality. One of the most important steps towards this was the intensified mining of coal in Great Britain in the 18th century. This made it possible to use

coke instead of wood, which was becoming increasingly scarce, as a fuel in the smelting process.

Cast and wrought iron have different characteristics. Wrought iron has ten times the strength of wood under compression and one hundred times that of stone. Cast iron is twice as strong as wrought iron under compression, but is less strong under tension. This explains why wrought iron has always been used for suspension bridges and cast iron for arched bridges.

Iron has been defined as a linear two-dimensional fragile-looking material, in contrast to the solid, three-dimensional sturdiness of masonry. Elegant linearity is iron's most rational form. These characteristics led away from the solid, block-like, closed type of building, towards an open, linear, articulated frame. The frame principle can be seen in its earliest form in the tent and in its most ingenious form in the Gothic cathedral. New about the iron frame was simply the range of possibilities it opened up.

Iron and after 1860 steel, made it possible to achieve spans wider, to build higher, and develop ground plans more flexible than ever before. Glass in conjunction with iron and steel, enabled the engineer to make whole roofs and whole walls transparent. Reinforced concrete, introduced at the end of the century, combines the tensile strength of steel with the crushing strength of stone.

Architects knew little about these things, they left them to the engineers. By about 1800 architecture and engineering had become separate professions for which a separate training was provided. Architects studied in the offices of older architects and in schools of architecture, until they set up themselves in practice. Engineers were trained at special university faculties or special technical universities.

The most perfect examples of early iron architecture, the suspension bridges are the work of engineers, not of architects. The early culmination of the iron-architecture was perceptible in the constructions of large greenhouses. The gardeners and horticulturists used to the iron- and glass-work of conservatories. These giant greenhouses were made of cast-iron and glass. The elements could be fabricated industrially and rapidly erected on a light foundation. The semicircular vault and the ceiling were glazed throughout. The modular system, the new scale, the fantastic dimensions, the simplicity of the architectural design, the repetition of simple forms and the rapid erection had consequence for architecture.

Parallel to the development of iron construction, which tended to produce arched and domed spaces, there was another school, concerned exclusively with the rectangular relationship between support and beam. In 1801 Boulton and Watt built a seven-floor cotton mill in Salford, in which the whole of the interior was constructed, for the first time, with iron supports and beams. The exterior walls were of masonry.

In 1848, James Bogardus supported the external walls of his New York cast-iron factory with pre-fabricated cast iron columns and beams, and filled the space between them with huge windows. The use of pre-fabricated parts made it possible to erect buildings very quickly. It is true that Bogardus invoked the Venetian Renaissance in his façades, yet they were similar to the façades of the 'skeletal' buildings, which were to come later. Building with skeleton frames tended not to have prominent façades, and since they were built out of pre-fabricated parts, variations in grade between different storeys began to disappear. The structural functions were performed by a network of upright and horizontal beams, which were given lightness and transparency by huge areas of glass.

In the early period of the iron architecture the steel pillars were decorated as if they were made of stone. The architects did not use steal structures without decorations, ornaments. Although these steel columns were thin, they had such capitals and pedestals as the stone columns in the historical architecture. The importance of these buildings lies in the way the architects have solved a comparatively new building problem with the techniques available at the time, nonetheless respecting historical tradition. This principle was to become very important in the new architecture. Already Viollet-le-Duc claimed that structural design might constitute the universal principle of modern architecture.

Only in the 20th century could the architecture free itself from the restrictions of the historical styles. But the prototypes of modern architecture came to be created in the middle of the 19th century. Their first appearance was a turning point of great historical significance for

the development of the new architecture. In the space of a few years three buildings were erected, each of which amounts to a statement of basic principles: a cast-iron factory in New York by James Bogardus in 1848, Joseph Paxton's Crystal Palace in London in 1851 and Philip Webb's Red House in Kent in 1859. In all of these buildings are to be seen the beginning of trends which have become central to architectural and town-planning practice and theory during the twentieth century.

New functions

Next to the question of the styles in contradiction to the use of new materials and structures, the 19th century was a period when new functions appeared and spread in the architecture. The importance of this period is given not because of repetition of historical architectural styles, but because of the great development in the field of the functional planning.

The application of period detail remained on the surface, and the architecture as a job of designing to fulfil functions remained undiscussed. People thought much too much of aesthetics and too little of function.

Nineteenth-century architecture is first of all a simple matter of statistics. In 1800 Europe had a population of 187 million, in 1850 266 million, and in 1900 420 million. These people who lived in an age of industrial revolution required hundreds of markets and stations, schools and town halls, hospitals and prisons, and hundreds of thousands of houses and blocks of flats. This massive renewal of the stock of buildings affected every type of structure.

This change in quantitative scale inevitably had an impact on the nature and the quality of the architecture produced. In order to build quickly and on a large scale an attempt was made to perfect standard types, which could serve as examples. The nineteenth century is a golden age of model collections of every kind, from the cottage to the city apartment block, from the church to the prison and mental hospital. The period can boast masterpieces comparable in distinction to the great works of the Renaissance, but the originality of this period doubtless lies as much in the mass of average works as in the few masterpieces. The individual building is less significant than the series to which it belongs.

The effect of a major change is in the system by which buildings are commissioned. It is not so much the conflict between architects and engineers. It became the practice to make systematic comparisons between the costs of each design in terms of construction, layout and style. Architecture became standardized, regulated and quantified. The modernity of the 19th century is due to the adoption of the typological approach just as much as to the use of new materials. Thus question of style were covertly relegated to secondary status.

If one looks at any book on the history of western architecture from the beginnings to the middle of the 18th century, one will find that it is almost entirely made up of churches and castles and palaces. In addition there are a few medieval town halls; more frequently theatres of the 16th century have survived, rarely a hospital or a library like the Laurenziana in Florence. All this changed in the course of the 19th century; the architects were concerned with a multitude of building types in the course of his career.

It should not be forgotten that to build, for example, a palace for democratic government or a palace for the instruction of the people was equally new. In fact to erect public buildings, specially designed as such, had been extremely rare before 1800. There were town halls, of course, and stock exchanges, but these were exceptions. If one tries to pick out the best examples of town architecture of all dates and all countries in the nineteenth century, the vast majority would be governmental, municipal, and later private office buildings, museums, galleries, libraries, universities and schools, theatres and concert halls, banks and stock exchanges, railway stations, department stores, hotels and hospitals. They will have to include a number of churches, palaces rarely, private houses, of course, as the traditional architectural tasks. But most of them were erected not for worship not for luxury, but for the benefit and the daily use of the people, as represented by various groups of citizens. In this a new social function of architecture appears.

At this time new schemes were worked out for special library stores with stacking apparatus. For hospitals, systems were tried for groups of separate wards and separate

buildings for each kind of disease. For prisons the star-plan was invented and accepted. For banks and stock exchanges the glass-covered centre hall or court proved the most serviceable solution. For museums and galleries an especially good system of lighting was essential, for office buildings the most flexible ground plan. And so every new type of building required its own treatment; and these principles were to follow changes in function and changes in planning.

The form could really be determined by the specification: the architectural simplicity of nineteenth-century French hospitals was the result of the economic policy of the hospital administration and of an aesthetic consequence. In other words the architects strove to build as inexpensively as possible, and also the utilitarian buildings must not be decorated.

The **national monuments** are the most particular but the most significant new examples of our period. Earlier it has always been customary in monarchies to erect monuments to kings or princes after their death. The 19th century was the era of '*l'Europe des nations*' (Europe of nations) and was the era of the national monuments, though the story of this building type begins in the 18th century. This era had inherited three types of commemorative structures from the Romans: the column of the type of Trajan's column, the triumphal arch, and the equestrian statue. They were never forgotten, not even in the Middle Ages. The Renaissance did not take up the narrative column or the triumphal arch; the equestrian statue remained an accepted memorial type.

The first monument to national genius built especially as such is William Kent's Temple of British Worthies in Stowe put up in 1733. It was built in a new form: on a curve with in the middle a pyramid and a niche originally containing a statue of Hermes. On either side are busts, so here princes and statesmen stand side by side with scientists, the philosopher, the architect and the poets, and on the same level.

The Newton cult created monuments as much abroad as in Britain. Such monuments were created of the first order in France. Even if they remained on paper and were bound to remain on paper was because of their huge size. The first and by far the most important amongst these monuments were Étienne-Louis Boullée's Newton monument. It is in the form of a globe intended to be about 400 feet in height. These megalomaniac dimensions are characteristic of French architects of Boullée's age.

In the 19th century the architects used not only from the Romans inherited forms and vocabulary for design of monuments, which were the column, the triumphal arch, the peripteral temple, the tholos, but more monuments were built in Gothic style mostly in Great Britain. These monuments built in contemporary styles expressed always the general taste and the philosophy of Historicism.

Similarly to the national monuments the **government buildings** had symbolical meaning. These building types such as houses of parliament, ministries, public offices, town halls, law courts had only a little preceding example from the past, but were built in a great number in our period. Their particular functional claims and the formation of their ground plans developed during the 19th century.

Theatres were also built in previous centuries (in ancient times and in the Renaissance and Baroque), but the theatre became the most typical building of Historicism. In the 19th century they were also built in a great number and in a bigger and bigger size. Behind their representative architecture their functional planning had a great development. The connection between the main functional parts (the stage, the stage-loft and the auditorium) remained linear, but the measurement of the other public spaces (of the entrance area, the stairwell and the lobby) increased during the century because of the increasing social importance of the theatres.

Also the **libraries** had some previous examples, but they underwent a great change in this time. While circular libraries remained the exception, longitudinal rooms with wall-shelving and galleries were standard to the middle of the century. The social importance of the libraries increased during the 19th century and their form got from the hall libraries to the selected reading and stack rooms. The reading room became the spectacular part of the library often with decorative structures, but the stack rooms were built without decoration.

The formation and development of **museum** buildings followed the development of the Historicism in a characteristic way. In the previous eras there were built buildings only for private art collections. In our period the archetype of public museums was designed by the French architect Durand, who planned a symmetrical building with four inner courts and with a rotunda in the middle. The main problem of this building type was to provide for good lighting of the exhibition. Durand gave a good solution for this problem, which was followed by more European museums.

The new civil societies with their increasing organization claimed also such public buildings as **hospitals** or prisons in a great number. The programmes of hospital and prison accommodation have much in common. In both cases a number of people are confined in one particular place, although they would prefer not to be, and in both cases constant supervision is necessary. The ideal hospitals of this era were built with pavilion system symmetrically around a central court. This form was inherited from the previous century, but spread in the 19th century.

In this century a great period of **prison** reform had begun, and an architecture embodying the new humanitarian ideals was initiated. A lot of prisons were built in rounded or star-shaped form around a centre. The organisation of life in the prison determined the architecture in every way. The main aim was the continuous surveillance of all prisoners from a single observation post. The ideal prisons were designed in circle, semicircle, polygon or star-shaped form around a centre. Other possible obvious expression of these claims was the radial plan, a hexagon with six wings linked to the centre. From this central observation post radiated wings contained the individual cells.

Some people think that if the symbols of the medieval architecture are the cathedrals and fortified castles, than the symbols of the nineteenth century architecture are **exchanges, banks and warehouses**. These were the most important building types of the civil architecture. At the beginning of the century the severe Neo-Classical style was preferred for banks and exchanges. The style probably intended to express security. Later all of the historical styles were used also for these building types. Early glass roofs were built in bigger and bigger size for the representative, huge banking halls.

The shops, stores, department stores or the warehouses were more wide-spread new building types in the 19th century. From the beginning of the century the shops were often built covered by a glass barrel-vault, as a passage. These gave the early examples of using iron as new material in covering long passages. The inner span increased continuously during the century. The same process happened when the markets became market halls covered by glass roofs. The warehouse was a really new building type holding shops together in a great building. Main claims were the great spaces and spans to show and regroup free the wares and to see across the different storeys. The mature and representative shape of the warehouse formed only in the period of Eclecticism.

In the 19th century the train service developed rapidly. The first cast-iron rails were made at Coalbrookdale in 1767, the first horse-drawn public freight railway was the Surrey Iron Railway in 1803, and various experiments were followed with the locomotive on tracks between 1801 and 05. George Stephenson designed the first real railway Liverpool to Manchester opened in 1830. The line was 34 miles long. In the 1830s other countries began to build railways as well.

The type of the **railway stations** had to be developed in the 19th century. A two-storied block along the line was the type of railway stations of the early years. The claim to cover the rails appeared early, and resulted in more and more huge glass roofs. The most important type is the terminal station, when the main block across the lines at their ends closes the space, and two wings are connected with it. Sometimes these terminal stations were built together with large, representative hotels, so the iron structure could be hidden from the direction of the city. As for stations, little changed functionally in the course of the century, but stylistically change followed change as at other building types. There was a contradiction between the functional and structural claim of the railway stations and the historicizing building behind which they were hidden. This contradiction was solved only at the turn of the century when the structures were shown unvarnished.

The industrial architecture in bigger degree appeared in our period. The **factories** were cheap, simple, rational and functional buildings, but in the early time they were built with historicizing façades. The great structural innovations were the iron and later the steel frame and, from the end of the century, reinforced concrete. These new materials and their possibilities have already been discussed.

As the railway stations and factories, **conservatories and exhibition buildings** were essentially created in the 18th and early 19th centuries. The first conservatories of glass and iron had appeared in 1815 to 17, until then conservatories had been of glass and stone. These greenhouses gave examples for the huge exhibition buildings with their light structures.

The originality of architectural culture in this 'long nineteenth century' lies in these contradictions and experiments. Never before had the variety of styles been so great or the effort at standardization so permanent. Never had the quest for novelty been so deliberate or imitation so common. Nevertheless the originality of this century was reflected in systematic thought on building types and specifications and in the strained relationship with the whole tradition of architecture.

Neo-Classicism and Romanticism in Great Britain

The architecture of early Neo-Classicism and Romanticism (18th century)

English Landscape Gardening and Palladianism

The English architects played a great part in the evolution of Neo-Classicism. The English civil development happened earlier than in the other countries of Europe. In consequence to this, there was a unique architectural development. Certain styles appeared not at the same time as in Europe. The Baroque style in England developed later, and spread in a classicist form, helped the architectural changes in France or in Germany.

The Romantic Movement originated in England. In literature this fact is known well enough, but for architecture it has yet to be established. In literature Romanticism is the reaction of sentiment against reason, of nature against artificiality. Romantic poetry expresses a new enthusiasm for nature and for early or distant civilisations. The Romantic attitude is one of longing, antagonism to the present, to the Rococo idleness, to the rationalism, industrialism and commercialism.

The Romantic Classicism signifies the earliest appearance of the Romantic architecture in Western Europe. The new civil societies took their own ideas from the ancient times. These ideas expressed only romantic longing for an imagined and fair antique world, and were without scientific foundation.

Piranesi's activity was characteristic of the appearance of the Romantic Classicism. **Giovanni Battista Piranesi** (1720-1778) was a Venetian architect, who lived for a long time in Rome. He built little, but etched innumerable plates of architecture, sometimes fantastic but more often about the Roman Antiquity. One of his plans is a splendid entrance hall of a church.

Piranesi was famous all over Europe for his plates of Roman buildings. His ideal plates, plans and drawings helped to recognize the Ancient Roman architecture. In his plates all buildings seem the works of giants, and people look like midgets. These plates were true in fact in their details, but unfoundedly big in their scale. Those, who wanted to recognize the ancient architecture on the basis of these pictures, could over-estimate the dimension and beauty of the antique buildings. This romantically over-estimated architecture gave examples to the architecture of early Neo-Classicism or Romantic Classicism. These overstatements made it possible to enlarge the ancient proportions in the dimension of the architecture of the 18th-19th centuries.

In Great Britain the culture of environment was different than in other European countries. The so-called **Palladianism** or Palladian style lived longer in the Baroque period from the 17th century. Until the mid 18th century, British architecture was wholly dominated by Palladianism. This style was derived from the style of the late Renaissance Italian architect,

Andrea Palladio (1508-80), whose buildings are distinguished by great simplicity and balance, based on the strict application of symmetry and a logically structured system of proportion. (Palladio built such masterpieces as the Basilica and the Theatro Olimpico in Vicenza, more villas in Vicenza too, and some churches in Venice. His important villa is La Rotonda in Vicenza.)

The Renaissance tried to revive the ancient times, ancient architectural forms similarly to the Neo-Classicism. In England the Italian late Renaissance came into interest instead of ancient architecture. This architectural style is called Palladian style, which existed even in the mid 18th century in Britain. This style with its changes led to early Neo-Classicism. Building Palladian in the 18th century thus meant building specifically British, in contrast to the cluttered Baroque style of the Catholic and absolutist countries in the rest of Europe. The new aesthetic theory led to the point where buildings were no longer considered as independent, self-contained formal units but as component parts of their environment.

The Palladian style laid out the buildings together with their surroundings. Beside this style landscape gardening had an architectural influence in Great Britain. The Palladian buildings with their simple, geometrical forms are contrasting with the surrounding landscape garden. The symmetrically planned Baroque garden-architecture did not succeed here, the gardens were more natural. The name of this garden-architecture, designed naturally, is referred to as 'English garden'. The conception of the landscape garden is a truly Romantic conception, appears at first in Rococo dress. The **English landscape garden** was developed in the early 18th century in opposition to the geometric French garden.

A garden plan was designed by **Alexander Pope** in **Twickenham**, in Middlesex in 1719. It was among the first English landscape parks and gardens with its little wilderness, rounded temple, and grotto. A Baroque axis can still be observed but with some irregularly winding ways, groves, garden houses and pavilions, rounded temples, statues amongst the naturally grown, picturesque plants.

This movement reached its climax in **William Kent**'s garden (1685-1748) in **Rousham** in Oxfordshire in the 1730s. Here Kent laid out characteristic lakes with fountains and picturesque clumps of trees, as if they were grown naturally. Kent as a Palladian architect worked out and put the principles of the landscape gardens into practice successfully.

The ideal of symmetry was abandoned in favour of the more interesting asymmetry and irregularity, which permitted a more individual approach to design. The new cult of the picturesque was linked with enthusiasm for ruins in their often painterly settings.

Also Kent designed in **Stowe**, in Buckinghamshire a great landscape park with pictorial treatment of nature and architecture, which had a major influence on the future development of the new type. In Stowe in this 'sacred landscape', with its complex mythological and political iconography, Kent designed a rounded ancient temple as a garden pavilion. This circular Temple of Ancient Virtue is based on Palladio's drawing of the Temple of Vesta in Tivoli.

In Stowe Kent built a monument to the national genius in 1733. His Temple of British Worthies was built in a new form: on a curve with in the middle a pyramid and a niche originally containing a statue of Hermes. On either side are busts, so here princes and statesmen stand side by side with scientists, the philosopher, the architect and the poets, and on the same level.

The great name in the history of mid-eighteenth-century gardening is Lancelot Brown (alias **Capability Brown**, 1715-1783). He revolutionized garden art all over Europe and America. First he was William Kent's collaborator, but after his death Brown worked independently. His style was more varied and ingenious than Kent's style. The Blenheim palace was built by Sir John Vanbrugh in 1705. Here in the garden of Blenheim palace Capability Brown laid out wide, softly sweeping lawns, artfully scattered clumps of trees, and serpentine lakes in 1765.

What had been tried out on a small-scale in landscape gardens was soon carried over into large-scale works, once again in both Neo-Classical and Gothic versions. New understanding of Antiquity derived from archaeological expeditions and publications from the mid-18th century.

At that time the English architects and clients could already study the classical buildings and motifs in books. In the 1750s James Stuart and Nicholas Revett were the first to survey the

classical architecture in Athens. First volume of their monumental book, 'Antiquities of Athens', came out in 1762, with accurate plans and views. Based on precise measured drawings done at the sites of the ancient ruins between 1751 and 1754, these books set a new standard for archaeological investigation in the eighteenth century. In doing so, they also transformed our understanding of Greek architecture and by pointing up differences between Greek and Roman examples fundamentally challenged prevailing notions about a universal classical ideal and fueled the Greek Revival movement that dominated British, European, and American architecture and design for over a century. Originally the 'Antiquities of Athens' was published in four volumes that appeared between 1762 and 1816.

In this time the architects' aim was to turn directly to Antiquity for models instead of the classical grammar transmitted through the filter of the Renaissance. An increasing number of archaeological publications provided accurate plans for these. In addition to this, it became customary for architects to survey and study Greek and Roman buildings on site as part of their training.

These two architects, Stuart and Revett, had worked at the expense of the recently founded Society of Dilettanti, the London Club of archaeologically interested gentlemen. Two years later the temples of Paestum were published by the French Dumont. With these tomes and other archaeological publications, the scholarly world discovered that Greek temples looked quite different from Roman architecture, and that the architecture of the great Roman Empire itself was very heterogeneous. In these books the architects in England could see for the first time the strength and simplicity of the Greek Doric order. Until then and since the Books of Orders of the 16th century the much slenderer variety had been known and used as Doric: the Roman or the Tuscan Doric order. The short and thick proportions of the Greek Doric order, and the complete absence of a base shocked the architects. It became the leitmotif of the severest variety of the Classical Revival, that was known in England as the Greek Revival.

There was a marked tendency in archaeological publications to prefer the Greek to the Roman. **James Stuart**, alias 'Athenian Stuart', (1713-1788) copied complete Greek structures on Northern soil, and put up Doric temples for Northern patrons. These miniature pavilions in Doric forms placed into landscape gardens were picturesque pieces of garden furnishing. At Hagley, near Birmingham a faithful copy of a Doric temple was built by Stuart in 1758, it was the earliest monument of the Doric Revival in Europe. Architects too, and even country builders, knew by 1760 enough of the orders and the details of antiquity to be able to reproduce antique buildings or ruins.

The new direct approach to Antiquity first became apparent in the interiors of the great country houses. In this field, the uncontested master in the 1760s and 1770s was the highly successful architect **Robert Adam** (1728-1792). The Palladian style and the English garden-architecture were connected in his activity. He is internationally known as the father of the Classical Revival (or the Neo-Classicism) in Britain. His revival of Roman stucco decoration and his delicate adaptation of classical motifs have influenced the Continent just as widely as the new English style in gardening. The general European style of the mid 18th century was the Rococo, or the Late Baroque, but Adam followed Palladian standards.

In his travels in Europe Robert Adam studied not only the architecture of Andrea Palladio but also that of the Ancient Rome. He went to Rome as a young man, from there crossed over to Spalato (today Split in Croatia) to study and measure the remains of Diocletian's Palace, and after his return home published the results of his research in 1763. Now these engraved folios of the monuments of antiquity are the hallmarks of the Classical Revival. Robert Adam reached his greatest successes in private houses, whether in London or in the country. He built many buildings, mansions, palaces. Adam's buildings were designed with ancient Roman architectural details but the shape of them is usually simple, precise in contour, with two symmetry-axes reminding us of Palladio's villas.

The **Kedleston Hall** was built by Adam in **Derbyshire** between 1760-70. The mansion has two symmetry-axes and is surrounded with a landscape garden. Four corner-pavilions are attached to the central building, to connect the mansion with its surroundings. The representative interior in the middle axis is remarkable; it recalls the disposition of Ancient Rome. The façade has some Roman architectural details and a reference to so-called Palladio-

motif, which was the trade mark of Palladianism. This motif was designed by Andrea Palladio in the middle of the 16th century in Vicenza Basilica, it consists of a semicircular arch between two horizontal openings. This motif is also called Serliana in Great Britain because it had been published by Sebastiano Serlio in his book *'Trattato de architettura'* in 1537 earlier than Palladio's Basilica was built.

In the first half of the 18th century, the whole of Britain was covered with Palladian buildings consisting of clearly defined cubes, designed on a strict system of proportions and externally very sparingly decorated. Façades were marked with a large portico in the manner of classical temples, above a rusticated plinth level.

The **Syon House** was designed in **Middlesex** by Adam in 1761 and built between 1762-69. Adam planned there a symmetrical ground-plan with a rotunda in the middle. In the east wing there is the Long Gallery, where the walls are covered with stucco work in a light and quick rhythm. Adam designed the furnishing of the interiors himself, and in his mature phase covered his ceilings with a very flat, delicate plaster. The decorative patterns were inspired by Roman interiors such as those surviving in Herculaneum and Pompeii and by the ornamental grotesques of the Renaissance.

The great entrance hall in the west wing was built with a semicircular apse and a cupola. Into the opening of the rectangular recess on the south side Adam inserted one of his favourite devices, a screen formed by a beam supported like a bridge on two slender Roman Doric columns. The niche and the hall are thus both separate from each other and connected. The frieze of the entablature continues round the room, unifying the whole space but without a supporting architrave. So the metopes and triglyphs of the frieze are suspended in mid-air. This treatment was typical of the liberties that Adam allowed himself in the use of the classical orders. The inclusion of copies of antique statues is part of the total composition.

Adam liked to extend a room into a gently rounded niche screened off by two free-standing columns with an entablature above, like in **Kenwood** House. The **library** was built from 1767 to 69, and is one of the high points of Adam's decorative art. The long rectangular room again ends on both sides with apses and a screen of columns. This transparency – air floating from room to apse between the columns and above the entablature – is original. The combination of rooms both sculpturally moulded with niches, apses and columned screens, and designed with walls and ceilings in schemes of white and gold pastel tones, became a trademark of the Adam style.

This motif occurs again in exterior architecture in the entrance screen to the grounds of Syon House. Adam used gracefully ornamental pilasters and a lion in profile silhouetted against the sky as classical elements.

In the 1770s, Adam worked mainly on building projects in London. In a number of town houses he was able to demonstrate his skills in extremely confined spaces. A remarkable example is the **Adelphy**, the building of the Royal Society of Arts in London, built by Adam from 1772 to 1774. Adam used so-called Palladio-motif together with some Roman architectural details, Roman Ionic order of columns on this façade. A complete row of terraced houses with palace-like façade was a novelty in its era, but the Adelphy was dissembled before the Second World War.

The elegant Adam style suddenly fell out of fashion from the late 1770s, as quickly as it had become popular. It was criticized as being too pretty and superficial, while the lavish decorative features appeared over-expensive. Nonetheless, Robert Adam and his brother James Adam created some of the most important interiors of early Neo-Classicism, and their style was imitated throughout Europe.

Concerning Adam's life-work, important fact is, that he did not build only Palladian houses, but he designed also some picturesque castles with medieval forms. The **Culzean Castle in Ayrshire** is the most well-known of them, its building started in 1787. Its shape imitates a medieval castle, which was grown irregularly with permanently added wings or rooms to it. This is a realization in stone of the imaginary landscape architecture, which Adam spent so much of his spare time painting. Contrasted with its medieval outside and picturesque shape, the interiors of the Culzean Castle are built in classical form.

Adam's contemporaries and excellent representatives of the English Palladianism were John Wood the older (1705-1754) and his son John Wood the younger (1728-1781). The senior **John Wood** was the first, who designed a whole urban space uniformly in Palladian style. The **Circus in Bath** was built in 1754, as an example of the first attempts at changing the Baroque style. These independent palaces were built side by side, with uniform, continuous architecture bordering the space. This was a novelty, but this kind of space-organization was spread in the period of Historicism.

The **Royal Crescent in Bath** was built similarly from 1767 to 1775 by **John Wood the younger**. The thirty palaces got the same continuous façades with big Ionic columns. The semicircular row of houses is opened to a green space, to underline its geometrical form.

The Gothic Revival

Not only did the late Renaissance and the Classical style have a lasting influence in Great Britain but the architecture of the Middle Ages, especially the Gothic style also did. In fact the Gothic style had never quite died in England. There is unselfconscious Gothic Survival in much provincial work before 1700, and there is self-conscious Gothic Revival as early as the late years of Queen Elisabeth (Wollaton Hall, 1580) and the years of King James (the Library in St. John's College, in Cambridge, 1624). Sir Christopher Wren (1632-1723) has the greatest name in English Baroque. He also used Gothic forms in some of his London churches. He recommended carrying on Gothic where original Gothic work was present. He advocated here Gothicism for the sake of conformity as well as grace.

In Great Britain the first expression of the picturesque were mingled with numerous forms in which the Gothic had survived. Throughout the 17th and the 18th centuries the colleges of the English universities remained true to the Gothic style. The continuity was unbroken. Similarly that most popular architectural expression of Romanticism, the revival of medieval forms, started long before the Romantic Movement proper and went through all the phases of eighteenth-century style, before it became wholly Romantic in character.

This conception might be called Baroque Gothicism (by Nikolaus Pevsner). Its leader was **Sir John Vanbrugh**, big Baroque master (1664-1726), and it was due to him that Baroque Gothicism also entered the field of domestic architecture. **His own house at Blackheath in London** of 1717-18 is castellated and has a fortified-looking round tower. Thick round towers and battlements occur even in his country houses, which are otherwise in the current style.

Vanbrugh used medieval forms for two reasons: he used the associational and the picturesque arguments. Both were developed by theorists of the 18th century. A building is clothed in the garb of a special style, because of the meditations which that style will rouse. And a building is planned in conjunction with the surrounding nature.

In case of the earliest Gothic Revival antiquarian knowledge was still scanty. The innumerable Gothic seats, hermits' cells, sham ruins are charmingly naive and light. Even Robert Adam enjoyed drawing ruins, and occasionally designed domestic work in a mildly medieval taste. Gothicizing pavilions or garden seats were published in P. Decker's book titled *'Gothic Architecture Decorated'* in 1759.

Horace Walpole had established the Gothic as a style for the English country house. His **Strawberry Hill in Twickenham** in Middlesex, near London, became famous among architects of the younger school all over Europe. He gothicized and enlarged the original cottage between 1748-70 converted into his 'little Gothic castle'. Over this period it developed into an asymmetrical, charming cluster that put into effect the principles of the picturesque for the first time. Walpole provided the original house with polygonal bay windows, and built an adjoining two-storey wing with buttresses. As a terminal feature, he added a large round tower. The richly articulated exterior, with its projections and recessions, gables, towers and pointed arches, was intended to imitate the evolved layout of a mediaeval structure.

Walpole insisted that his interiors should have correct details. Fireplaces or wall panelling were copied from engravings after medieval tombs and screens, from the illustrations of the few publications on medieval architecture. The bookshelves in the library are based on the choir screen of Old St. Paul's in London, but the fireplace on a tomb in Westminster Abbey.

The application was done in a purely decorative way, all was made of plaster, wood or papier-mâché. This playful use of Gothic forms is close in spirit to Chinese furniture, or in other words to chinoiserie. Chinoiserie is a style in art that reflects Chinese influence through the use of elaborate decoration and indicate patterns. In a front cover an Indian pavilion, a Chinese pagoda and a Gothic chapel are drawn as illustrated examples of the principal picturesque styles followed during the entire century. William Kent, a Palladian architect and a pioneer of picturesque gardening, whose garden was designed in Rousham, worked with similar tastes.

The asymmetrical layout of Strawberry Hill became the hallmark of a whole movement that left its mark on English country house architecture towards the end of the 18th century, namely Castellated Gothic or the Castle style. Castle-like mansions with their irregularly grouped silhouettes blended picturesquely with their surroundings. The Castle Style was at the same time a perfect realization of the theories of both the picturesque and the sublime. The picturesque Castellated Gothic style soon achieved great popularity.

One of the most successful architects of the time was **James Wyatt** (1746-1813). Between 1796-1807 he erected for the eccentric author William Beckford one of the most spectacular monuments of the Gothic Revival, renamed **Fonthill Abbey in Wiltshire**. Here the eccentricity of a millionaire, called Beckford seems to have created something truly romantic. Beckford's original idea was to create a building resembling a convent, partly ruinous and partly converted to domestic use, which he could use for occasional picnics or supper parties. Finally he decided to live in it permanently. The brilliant cruciform plan, the central octagon with the huge, 84 meter high tower, (which some years later collapsed) and the sincere and elemental Gothic style gave the characteristic features of the Fonthill Abbey.

The architecture of Classicizing and Gothicizing Romanticism (1800-1850)

The most interesting architect in this period was **Sir John Soane** (1753-1837). He was one of the most original architects of the next generation after Robert Adam in England and in Europe. He pursued his own solitary graphic meditations aloof from all the conventional forms of Neo-Classicism, producing smooth and gentle surfaces of a linear pattern with great delicacy.

Soane went to Rome in 1776, where he could still have known Piranesi. Soane certainly knew Paestum (the ancient Roman town), and began to use Greek Doric columns in the same year 1778 in which Piranesi's book of engravings of Paestum was published. Maybe he knew the activity of the French architects, Ledoux and Boullée, but his designs are original.

In 1788 Soane was appointed architect to the **Bank of England** in London. This was a major position that he would occupy for the rest of his life, and it gave him scope to develop his theme of the dome in a very individual manner. Until his retirement in 1833 he extended the site and replaced much of the works of his predecessor Robert Taylor. The exterior, before it was converted by recent directors, indicates this new austerity. The ground-plan of the Bank of England is complicated, although it is built in a block with more inner courts.

Within the site of the Bank Soane had built a whole series of domed spaces, for example the Bank Stock Office, the Colonial Office and the rotunda. All of these interiors were top-lit by lanterns and lunette windows. Soane sought a road back to the primitive, basic form with the reduction of ornamentation to the essential. The interiors give an even clearer idea of his sense of surface integrity. The walls flow smoothly into vaults. Mouldings are reduced to a minimum. Arches rise from piers without capitals, which they seem to touch only in points. The geometrical shapes mattered without any decorations and ornaments. This was a radical departure from the classical tradition as Soane developed an original, highly austere, archaic-looking architecture with dramatic light effects.

A new approach to architecture was expressed in the 18th century, perhaps ironically, in the obsession with the ruins. Thus some architects began to imagine what their own buildings would look like when change and decay had reduced them to ruin. The continual dissolution of Neo-Classicism by the Picturesque tradition or Romanticism is a particularly English phenomenon. It reached a climax with Soane, who commissioned Joseph Michael Gandy (1771-1843) to depict his vast rotunda at the Bank of England at a point when it could be said to possess the status of a Piranesian ruin. In another picture the building is shown in cutaway

perspective, making it look ruinous. These two ‘views’ of the Bank of England are wonderful examples of the Romantic love of ruins, expressing a passion for the vanished worlds of Antiquity and the Middle Ages.

Absolute reduction is also the most prominent feature of the painting **gallery** that Soane built between 1811-14 for **Dulwich College** in London. This is innovative not only in its appearance, but also in the structure itself and its design. This is the first detached museum building in England erected to be a picture gallery and is one of the first top-lit exhibition buildings in Europe.

The extended succession of five exhibition rooms projects into two short wings to the west, and small low annexes are attached to the gallery wing. In the middle a small cruciform building projects, a mausoleum for the founder and the art collector, who supplied the pictures exhibited. The building consists entirely of plain brick except for the light bands of the plinth, cornice and lantern over the mausoleum. It is articulated only with plain round arches and vertical masonry strips. The building masses are modelled by light and shade through recessions and projections instead of the Classical orders. In the interior light plays the most important part. Natural light floods through the great top-lights in the exhibition rooms.

A hundred years had to pass before an original 'modern' style was really accepted. The nineteenth century forgot about Soane, and forgot about the German Friedrich Gilly, and about the French Étienne-Louis Boullée and Claude Nicolas Ledoux, who represented together with Soane a new, so-called revolutionary or visionary architecture in the period of Romantic Classicism. This is characterized by strictly cubic shapes without visible roofs and historical architectural motifs. The 19th century was still satisfied with the imitation of the past, despite of the fact that this epoch was so independent in commerce, in industry and engineering.

Soane's most independent design is **his own house in Lincoln's Inn Fields in London**. Between 1792 and 1824 Soane bought the houses at Numbers 12, 13 and 14 Lincoln's Inn Fields, which he converted into a residence, office and exhibition area for his art collection. In his own house Soane brought together all his design features: top-lighting, or side lighting (direct or indirect) illuminating a room in an unusual ways; domed rooms, and the reduction of Classical grammar to the simplest, basic rectangular forms and flat linear patterns. The latter are best observed in the façade.

The buildings are typical Georgian terrace houses of brick, each with three narrow window axes facing the street. Only the middle house was given a projecting façade of dressed stone. The ground floor of the house has severely plain arcading in front of the actual wall. The first floor repeats this unusual motif with the lightened variation of a typically Soanian incised ornament. These large round-arched windows on the upper floor originally opened into a loggia. There is not any motif in the whole façade having a Greek or Roman origin. Here more than anywhere in architecture England approached a new style unhampered by the past. But the ingredients of Soane's style are yet more complex, in so far as they are not only Piranesian and French but also English.

The façade of Soane's house, as it is now, has only one of the intended external screens, where four Gothic brackets are used with nothing on them, as an additional embellishment. These brackets came from the Westminster Hall and were incorporated in the front of the house when Soane worked on the Palace of Westminster. This is a most pointed demonstration of the middle position between Antiquity and the Gothic style. Such a combination of classicizing and medieval elements was something completely new. Indeed in the museum, which Soane had built and completely equipped at the back of his house, fragments of buildings of Antiquity jostle against Gothic fragments, neo-classical and neo-Gothic details occur, and a genuine Egyptian sarcophagus is the dramatic centre-piece. The Classical Revival, as has been remarked before, is only one facet of the Romantic Movement.

Soane united all his architectural effects in the breakfast room. The small square room is vaulted by a shallow sail dome, which rests on its points only. An umbrella vault is introduced only as ornamental incisions. Light is provided from several, partially concealed sources: a lantern in the dome, a window facing the inner court, and top-lights in two lateral annexes of the room that rise higher than the dome.

Soane did a great deal, that is more conventional than his own house. There are even some Gothic designs by him. As a representative of the Picturesque and Romantic, he sought poetry in architecture, mystery in lighting and also the primeval essence in any shape. At the same time, he wanted to re-interpret the language of Antiquity in a new, individual way.

This generation is characterized also by **John Nash** (1752-1835), who was Soane's great rival. Nash bestowed on English architectural culture a specific character that lasted a long time. He extended the principles of picture composition to whole villages, to country houses and the urban landscape. He was socially successful, and artistically conservative. At the beginning of the 19th century he took part in the town-planning of downtown London. Nash used the opportunity to draw up a large-scale piece of town planning, which he submitted in 1811 and which immediately won the approval of the Prince Regent.

At the beginning of the 19th century, London with over one million inhabitants, was the largest city in Europe, and demanded wide representative avenues. Nash designed a new street axis linking the Prince's residence with a new park to be developed north of Marylebone Road, called Regent's Park.

A new wide avenue was formed between the old streets, called **Regent Street** that connected the city with Regent's Park, a great landscape park. The novelty of this piece of town planning was that the Regent Street axis did not run straight but was moderated by several curves. Regent Street was interrupted by different space-forms: these forms in the city are squares, or circuses, and at Regent's Park a crescent and terraces. A square is a space with four corners, whereas a circus is round, they are closed urban spaces. A crescent is a semicircular form facing the park, as the vast terraces do too. The terraces are straight, palace-like buildings, homogeneous rows of houses, typical of London. These forms provided a series of interesting prospects along the very varied new street. Nash in fact carried the principle of the picturesque over into town planning.

Between 1811 and about 1825 Nash designed and built the frontages of old Regent Street and most of these palace-like façades round Regent's Park. What makes them memorable is the way in which they form part of a brilliant town-planning scheme. The Quadrant in Regent Street was built in 1819, where the frontages are almost entirely classical.

Just before Regent Street runs into Marylebone Road, it opens into the semicircular Park Crescent. Following a tradition established by John Wood and his son in the first half of the 18th century in Bath, Park Crescent was developed as a single architectural composition. This is a better developed form than in the Royal Crescent in Bath.

Around Regent's Park, Nash built further such homogeneous rows of houses, this time in longitudinal blocks called terraces. They are up to 300 meters long, and each block is different from the other. Generally the terraces have four stories: a plinth level, which is mostly rusticated, two upper floors, which are often decorated with giant pilasters or detached columns, and an attic above the entablature. To break up the great length, Nash used temple projections or pedimented porticos. Behind the lavish, palatial language of these façades is a series of ordinary terrace houses and apartment blocks. Each resident enjoyed an undisturbed prospect on the park landscape. Nash's terraces around Regent's Park are among the great townscape achievements of Neo-Classicism.

Regent Street and the terraces surrounding Regent's Park are composed with a sense of pictorial contrast and surprise. The **Cumberland Terrace**, built between 1826-27 by John Nash, is the most spectacular of those surrounding Regent's Park. It is to be compared to the rue Rivoli by Charles Percier in Paris. It recalls the ideal of a composed architectural landscape made up of pictures. The **York Terrace** (1821-30) along Regent's Park is also a typical London building with palace-like façade.

Unfortunately hardly anything is left of the buildings constructed by Nash along Regent Street. **All Souls Church** still stands, which serves as a pivotal point for the whole of Regent Street as laid out by John Nash from 1822 to 1824. Taking account of the bend in the street the church faces both directions, with a circular vestibule and spire instead of a traditional rectangular portico. It is a variation on the classical motif of the Tempietto and topped by a spire, an interesting translation of a Gothic feature into neo-classical language. Here the orders are in the Roman, not Greek, idiom.

While the All Souls Church and Regent Street frontages are almost entirely classical, Nash built in Gothic style too. He had a nice sense of associational possibility: he chose Neo-Classical style for his town house and Gothic for his country mansion. **His house in Cronkhill** in Shropshire was built in 1802 as an Italianate rural villa with a round-arched loggia on slender columns. It is organized asymmetrically round a circular tower reminiscent of the Italian buildings decorating the landscapes. The contrast between the plans and elevations with their continental right-angled symmetry and the asymmetrical British overall design was to remain noticeable until the end of the century.

John Nash built even **cottages at Blaise Castle in Somerset**, near Bristol in 1809 in a rustic Old-English cottage style with barge-boarded gables and thatched roofs. He designed a whole village of little cottages, using the opportunity to create the very image of the Picturesque Style with this artificial idyll. The cottages are all completely different from each other.

However Nash's best-known work, the **Royal Pavilion in Brighton** is neither neo-classical nor Gothic Revival, but exotic. From 1783 the Prince of Wales often spent the summer season at the fashionable seaside resort of Brighton. In 1787 he commissioned Henry Holland architect to build him there a villa. In 1815 the Prince, by then Regent, commissioned Nash to modernize the building. Nash and his extravagant client transformed the modest villa into an exotic dream world, where no costs were spared. Nash extended the villa using for this a mixture of oriental styles. 'Hindu' fashion or 'Indian Gothic' was the characteristic contemporary name of this style. The building was a resting place or villa of the royal family, and they wanted something special. India meant something adventurous, legendary, romantic for the English, and that is why Nash dressed the building in Indian style. The representative interiors and the composite shape was a truly Romantic composition.

Nash retained the basic neo-classical villa with its central rotunda and bow windows at the sides but clad it in a decorative style borrowed from India, with quatrefoil and horseshoe arches, polygonal piers and a busy roofscape of tent roofs, minarets and onion domes, which are supported on iron frames on this new, forward-looking material.

From the Classical point of view 1820 to 40 is characterized by the most correct neo-Greek. The success of so-called 'Hellenic Classicism' was the most striking feature of these decades. This was given impetus by a new generation of architects who had travelled in Greece. On their return these architects substituted Greek Doric and Ionic profiles for the Roman orders. The success of neo-Greek designs marked the beginning of this movement, which soon spread all over England.

The greatest effect of the Greek Revival was felt in the new public buildings of the fast growing cities. In this case, monumental temple forms were intended to express dignity, authority and intellectual grandeur in cultural institutions. The Greek Revival proved particularly suitable for museum structures. The most prominent representative of these new temples of the arts is this monumental composition of the **British Museum in London**, one of the first public museums in Europe. It was constructed to house the collections of Greek sculptures acquired by the state from 1805. **Robert Smirke** (1780-1867) began the now greatly extended complex in 1823. Originally it had four longish wings around an open courtyard, which was covered between 1852-57 to form the British Museum's celebrated circular Reading Room.

The entrance façade was given two short side wings and a central portico at the top of a flight of steps. The whole façade was enclosed in a monumental sequence of 44 Ionic columns. It is amongst the best examples in Britain, with its front grand Ionic order. It appears perfectly Greek, but reveals to the deeper-searching an equally Palladian structure. Centre portico and projecting wings are familiar features.

The Greek Revival also influenced English church building, which saw renewed activity in 1818, after the end of the Napoleonic wars. The archaeological Hellenism has a charming effect in this small church, in **Saint Pancras Church in London**, designed by **William Inwood** and his son, **Henry William Inwood** between 1819-22. They ingeniously mixed the classical shape with the traditional church-tower. The portico with its fluted Ionic columns is based on the Erechtheion on the Athens Acropolis. It has the proportions of the Greek and not the Roman Ionic order. The octagonal steeple is on the one hand a variation on the Tower of the Winds in Athens and on the other hand with a top borrowed from the Monument of Lysicrates in Athens

too. The side porticoes at the east end are adorned with caryatids like on the Erechtheion on the Athens Acropolis.

Its ground plan followed the pattern for English church construction that had been rigorously followed since the early 18th century. It is a long nave and aisles structure, an altar niche at the east end and a portico, lobbies and tower at the west end. So the ground-plan shows a simple, single mass unified church with a semicircular apse and two side porticoes.

A Hellenized version of a type of church was fixed by James Gibbs early in the 18th century. **St. Martin-in-the-Fields Church in London** built in the 1720s is the prototype of this kind of church, so of the St. Pancras.

From the Gothic aspect the development leads back to the Romantic Movement. To the generation in the early nineteenth century, the Middle Ages became the ideal of Christian civilisation. **Augustus Welby Pugin** (1812-1852), transferred the thought of Christianity and Gothic into architectural theory and practice. To build in the forms of the Middle Ages was his moral duty. And from another point of view the Gothic style was seen as a national historical style in contradiction to the international Neo-Classical style. Very soon each country claimed Gothic as its national architecture. No other country took so whole-heartedly to the Gothic Revival in all its tendencies and shades as England.

The **Houses of Parliament in London**, begun in 1836, are aesthetically more successful than any later large-scale public building in the Gothic style. A monument of national tradition had to be in a national style. The architect, **Sir Charles Barry**, (1795-1860), preferred the Classical and the Italian Neo-Renaissance style. But Pugin worked with him, assisted him and was responsible for nearly all the details inside and outside. The Houses of Parliament with their combined shape look like a medieval town with church-spires, town hall, and a row of medieval residential houses but the main façade is symmetrical and regular.

After the fire of 1834 it was decided to reconstruct the Houses of Parliament at Westminster in Gothic, so-called Elizabethan style. This showed a traditional concern with historical continuity combined with a taste for the picturesque along with a more archaeological approach to details. The idea of Gothic as the national style was then modern.

The new parliamentary building is in front of Westminster Hall and the cloisters of St Stephen's Chapel, which had escaped the fire. It is arranged regularly on two axes, which cross at the central hall, which is surmounted by a central spire. This central octagonal tower, at the crossing point of the long corridors, recalls Fonthill Abbey in Wiltshire by James Wyatt. The Victoria Tower, on the left, which stands over the royal entrance, and the clock tower, 'Big Ben', on the right break up the severe symmetry on the main façade.

Yet even Pugin's Gothic style turns out to be only a mask, as soon as the Houses of Parliament are examined as a whole. It is true, they have a picturesque asymmetry in their towers and spires, but the river front is, in spite of that, with its stressed centre and corner pavilions, a composition of Palladian formality. Gothic details are on a classical body.

Neo-Classicism and Romanticism in France

The architecture of Romantic Classicism in France (1750-1800)

The French Romantic Classicism was two-faced. One part of the architecture developed almost in an unnoticed way, step by step from the Baroque architecture. The other part with its radical changes had a smaller effect.

The buildings of the Late Baroque were built in the same time with the buildings of the early Neo-Classicism, of the so-called Romantic Classicism. The difference between them is given by their effect to the following architecture. The geometry and the antique forms displaced gently the unbound, arched Baroque and Rococo forms.

France had been far more devoted to the Rococo than England and so the reaction against it was more violent in France. The changes started as early as the 17th century. A break in the development was caused mainly by the rejection of the unconditional obligation laid down by the Académie de l'Architecture to follow Vitruvian doctrine, at whose heart was the classical

system of orders. The nature of their proportions had already been questioned in the 17th century by the scientist and architect **Claude Perrault** (1613-1688). This led into a process of questioning that subsequently gained strength from the study of ancient buildings. After the middle of the 18th century, there was also criticism of Rococo, whose undisciplined frivolity was contrasted with the 'belle simplicité' of Antiquity.

The French rationalist ideal demands the first attention, for it provided the framework of thought for the whole of the Enlightenment. The beginnings lie in the works of Claude Perrault. He was a doctor, anatomist, and experimenter in all kinds of devices, mostly mechanical. He turned unaccountably to architecture when he was already over fifty.

One of his chief architectural works was the **east façade of the Louvre** in Paris, built between 1667 and 74, but Perrault's contribution has often been called in question. Perrault laid out a majestic, calm and rhythmical façade according to the later principles of Historicism, preceding his era.

In the Baroque architecture the enormous building complexes were built and proportioned with big wings or rizalits. The Louvre, with its 150 m long east front overstepped the scale of the Baroque architecture. There is very little emphasis in the façade. The traditional French composition of a central feature with outlying pavilions was still in evidence, but there is scarcely a break in the plan, scarcely a break in the outline. Perrault designed a long, wall-like façade, without any motion of the mass. On the first floor he substituted the rizalits with flat motifs, between them the wall is behind paired freestanding columns, referred to a so-called *'cour d'honneur'*. The east front of the Louvre looks like a smoothed Baroque mass.

Perrault made his mark also as a theorist. He undertook a new translation into French of Vitruvius' *'Ten Books on Architecture'* in 1673. He knew well the classical orders of columns, he also wrote a book later about them. On this façade he used the Corinthian order. He aimed that the columns should resume its antique role as a supporting element, thus no longer appearing as an applied decorative device.

In his theory Perrault declared that he aimed to renew architecture by reverting to the purity of the temples of ancient Greece. This principles and this flat façade of the Louvre had a great effect on the following architecture.

Its influence can be seen on the **two buildings along the northern side of the Place de la Concorde** in Paris. **Ange-Jacques Gabriel** (1698-1782) represented the official architectural style in the mid-eighteenth century. He came from a dynasty of important architects, and succeeded his father as first architect to the King in 1742. He shaped the official style of architecture, leading it into the Neo-Classicist era.

The first great French architect to turn to more classical forms was Gabriel. He had never been to Italy, and must have formed his mature style on the examples of the most classical French architects of the 17th century – and it was a parallel to the Palladio and Inigo Jones revival in England.

In 1755 Gabriel won a competition to lay out a representative square before the Palace of the Tuilleries. He planned a noble and also unusual square, the Place Louis XV (today the Place de la Concorde). The rectangular space was defined by ditches and balustrades, with small pavilions, topped with statues, to mark the cut-off corners. The whole square was dominated by two majestic colonnaded buildings, commemorating Perrault's example at the Louvre. These palaces parallel with the river Seine were built between 1755 and 1775, one hundred years later than Perrault's eastern façade of the Louvre.

The large rectangle is overlooked only by two symmetrically placed buildings on the narrow northern side opposite the Seine. These two buildings were there only for aesthetic planning reasons and were allocated functions later on. The corner pavilions and the absence of a central feature are attuned to the open centre axis of the square.

The 96 m long two façades of the Place de la Concorde are similar to the Louvre's façade. They have such loggias, such two-storey colonnade between end pavilions on the first floor that Perrault had used in the east front of the Louvre. Thanks to the use of single instead of double columns it is translated into a lighter version in the 18th century manner. The vigorous rustication of the ground floor reveals English influence.

Between the two buildings is the Rue Royal, an architectural axis, leading to the Madeleine church, built by Pierre Vignon 50 years later, in 1816. The front of Madeleine completed the two façades of the Place de la Concorde as a middle portico.

Another of Gabriel's most important works was the **École Militaire in Paris**. His ambitious first draft was presented in 1751, but it was constructed between 1768 and 73. Originally the scheme was conceived as an educational institution for young aristocrats, but it was implemented as a military academy. The main façade with a strongly projecting entablature is dominated by the central pavilion. The Corinthian columns in the centrepiece lead over into the side wings in Palladian tradition, but there is a marked contrast with the plain walls of the Corinthian columns. There is nothing revolutionary in any of Gabriel's buildings.

The staircase of the École Militaire, for instance, is of the type of Mansart's Baroque staircase at Blois castle, but the place is easier to survey. The stone masonry as in all Gabriel's buildings is exquisite.

The culmination of Gabriel's career was the **palace of Petit Trianon** in the gardens of Versailles. It was built for Madame Pompadour and was begun in 1762. This is a perfect example of the most refined taste of the period. The house has the cuboid structure and giant order of a Palladian building. The little chateau in the park there, with its cubic structure and differentiated individual façades by means of giant pilasters or columns, reflects Palladian influences.

It is a small, simple, geometrical mass, has no curved projections, not a curved dome, nor even a pediment. It is an extremely handsome little cube with only a few of the most restrained external enrichments.

It has been said that the Petit Trianon presupposes influences from English Palladianism. But there is some in the general tenor or in the details to justify such an assumption. English influence arrived at Versailles a little later, both in the form of Palladianism and in the more eventful form of picturesque garden ornaments: a rotunda or monopteros was dedicated to Cupid and built about 1777 by **Richard Mique** (1728-1794).

Marie Antoinette's famous **Hameau** (in the photos), a mock-Norman farm was also built by Mique in the Park **in Versailles** between 1778 and 82. This is a planned hamlet in a landscape garden. Beside thatched cottages in the Norman style, the hamlet contains a mill and a lighthouse as well. The whole scheme reflects the retreat to the simplicity of nature that was propounded by Rousseau. Typically, the rustic effects stopped at the exterior.

The wealthy of Paris were equally longing at the time to have landscape gardens so-called *'jardins anglais'* or in English 'English gardens'. The Picturesque gardening in France dates from the 1770s, when a lot of wonderful gardens were designed in something of an English manner.

A characteristic example of the church architecture of early Neo-Classicism is the **Saint Sulpice in Paris**, built by **Jean-Nicolas Servandoni** (1695-1766).

Servandoni was Italian, he learnt in Rome, than began his career as a stage designer, and travelled in this capacity to more towns of Europe. From the 1720s he lived in Paris, and in a little while in 1732 he won a competition to build the western façade of the church of Saint Sulpice in Paris. Servandoni built a homogeneous, flat front as a wall on the square, contrasted with the Baroque planning, when the axiality was the most important. The façade has the firmness of geometry, the regularity, and the columnar rhythms of a Greek temple.

The church was slowly built and the details modified and changed during the years of construction. It was completed only in 1777 after Servandoni's death by Jean-Francois-Thérése Chalgrin, a pupil of him.

The first design for the Saint Sulpice drawn by Servandoni in 1732 was not advanced, was evidently derived from the west front of St Paul's in London. The Baroque attitude is visible on the stressed middle axis. The middle rizalit with tympanum and the two towers were typically Baroque. On the second design for the Saint Sulpice Servandoni planned a more unified, more homogeneous front, near to the later realized façade. In 1742 he engraved this variant that showed the entablature above the first order extending unbroken across the façade. This façades show the changes from the Baroque to the Neo-Classicism, from the emphasized middle axis to the smoothed, wall-like, homogeneous front.

Jacques-Germain Soufflot (1713-1780) was to be the most important French architect of the generation after Gabriel's. Soufflot is principally known for the **Panthéon**, so-called during the Revolution. It had been built as the **church of Sainte-Geneviéve** between 1755 and 92 in Paris.

The Panthéon was Soufflot's greatest work, one that embodied all the most advanced theories on structure and on design. Its construction was followed with the keenest interest by architects throughout Europe. The church has always been considered a masterpiece of eighteenth-century architecture.

The discussion occasioned by the building of Sainte-Geneviéve was of the highest importance in furthering theories of construction in France. Soufflot and his associates stressed the development of abstract theories based on experiment and mathematical calculation opposite the empirical knowledge alone. The Panthéon was a revolutionary design for France, even if for England it would have been less so. Soufflot was in sympathy with English buildings, this is proved by the evident dependence of the dome of his church on Wren's St. Paul church's. This splendid dome on its high colonnaded drum rises above the crossing of a large building on the plan of a detached Greek cross.

The small Renaissance church of Bramante, the Tempietto in Rome, built in the 16th century, served as an example for the cupola of the Panthéon, and for more other cupolas of Neo-Classicism later. They have two drums, the lower is colonnaded, and the other is massive and holds the dome.

The plan of the Panthéon is a Greek cross, the geometry is pure. The nave and aisles were divided by rows of giant Corinthian columns, supporting a continuous entablature from which sprang the lightly constructed and cut-away vaults and domes. The spatial elegance and the structural fineness of the whole were extraordinary.

Lower domes cover the four arms, much in the same way in which this had been done at Holy Apostles in Byzantium, at Perigueux and at St. Mark's in Venice in the Middle Ages. But while in these and all similar churches the domes rest on solid walls or piers, Soufflot chose to place his domes as far as possible on columns carrying straight entablatures. The ambulatories which surround the whole church have nothing but columns, except below the corners of the central domes, where Soufflot introduced slim triangular piers. These were later enlarged and the outer windows filled in. That detracts from the sense of lightness which Soufflot wanted to create in his church.

The combination of strict regularity and monumental Roman details with this lightness is his most original contribution. It corresponds to what Robert Adam was beginning to do in England at the same time. But while Adam lightened his models instinctively, Soufflot did it according to a well-considered theory. This curious theory deserves comment. He and others had denounced pilasters attached to piers as unnatural – by this they meant as Baroque. The columns instead were natural, and also correct according to the Greek precedent. At the same time the column was the slimmer support, and it was the more rational solution, if it could be made to carry its load satisfactorily. The model for these considerations of minimum mass to support a maximum load was Gothic churches. Soufflot said indeed in 1762 that one ought to combine the Greek orders with 'the lightness which one admires in some Gothic buildings'. St. Geneviéve stands indeed in the middle between the massive architecture of Antiquity and the lighter Gothic architecture. In that sense then France in the mid 18th century also had its Gothic Revival. But here it is so purely structural that it is scarcely noticed.

During the long period of construction, Soufflot continued to refine the structure, so he won smaller thicknesses. The details of the internal iron framework proposed for the pediment shows that the particular ironed stone structure of the Panthéon advanced the reinforced concrete structure in its principle.

The most typical buildings of the 18th and 19th century were theatres. A lot of them were built in this period not only in France but in all of Europe. Planning of these representative public buildings was a new task for the architects.

The most monumental French theatre was the **Grand Theatre in Bordeaux** built by **Victor Louis** (1731-1800) in the 1770s, it was his masterpiece. It is one of the most ambitious

and largest buildings of the 18th century. Victor Louis spent four years in Rome, where he developed his characteristic picturesque style and his particular feeling for theatrical effects.

The spectacular main façade of the theatre is dominated over its full width by a monumental Corinthian portico of twelve detached giant columns carrying a straight entablature. The entablature is emphasized with balustrade instead of a pediment and is crowned with statues. The motif of the unbroken horizontal line of the portico was a typical motif of the late 18th century in France, and that feature would echo also in the 19th century.

The mass of the building is one storey higher than the portico, and holds an enormous roof above the stage, the stage-loft and the auditorium. The theatre has a simple symmetrical mass and is totally free-standing. The auditorium is a truncated circle (or near-circle) with balconies as well as boxes, and with giant columns, of which four support the shallow dome of the ceiling. Inserted between the entrance area and the auditorium is a huge stairwell, it is higher than the other spaces. In its breadth and lightness it contrasts with the low, dark lobby, which corresponds to an oval concert room on the upper floor.

In the section the stage and the stage-loft are nearly twice larger than the auditorium. The roof holds them together in a large monumental mass. The auditorium is articulated by columns running through all floors, with the boxes suspended between them.

A further example of the high standards of public architecture is the Comédie Française, now the **Théatre Odeon in Paris**. **Charles de Wailly** and **Marie-Joseph Peyre** (1730-85) architects planned it between 1779 and 82, contemporarily with the Bordeaux Theatre. It has a simple mass; the façade is severely blocky with rustication and a massive giant portico of eight unfluted Tuscan columns with a straight entablature without a pediment. The top is a heavy attic above which rises a pyramid roof. The horizontally terminated, but monumental type of portico reveals a strictly architectural conception and looks similarly to the Bordeaux Theatre. But this Doric portico is less monumental than the Corinthian in Bordeaux.

After initially experimenting with a circular auditorium that would show in the exterior as well, the auditorium was lengthened into an oval and clad in a rectangular exterior. The auditorium has a flat dome above the large Ionic columns, as the foyer too. The vast roof holds them together with the stage in a large monumental mass as also in Bordeaux.

In contrast with the exterior, the interior with its splendid furnishings reveals the rich decorative and theatrical imagination of de Wailly, who had also learnt to appreciate the High Baroque buildings of Bernini during his time in Rome. New standards were set, not least in the treatment of subsidiary spaces, which were extended because of the increasing social importance of the theatre, and which adopted features of palace buildings. Two symmetrically laid-out stairwells resembling columned halls led from the open lobby into the airy, two-story foyer, where theatregoers could watch the public from an orbital gallery beneath a frescoed domed ceiling.

So the French Romantic Classicism was two-faced. These presented examples showed a successive developing from the Baroque architecture to the Neo-Classicism. In 1780s appeared another architectural tendency that showed radical changes, but had a smaller effect.

An irrational, emotive streak appeared in architectural theory in late 18th century. It was no doubt conditioned by the complete break in building activity during the French Revolution. The practicalities of architecture could be set aside for a time in favour of the production of grand and vast imaginative projects. This tendency was evident even before 1789, when the sensational English attitudes toward beauty were introduced into France in the form of Picturesque gardening theory.

In the late eighteenth-century France architects were no longer interested in structural elegance and lightness of form. They had learned to appreciate the strong sculptural qualities of the architecture of antiquity, Greek no less than Roman. They had begun to like in their own work large and simplified mass. The square and the cube had passed into favour and with them the sphere. The purified geometry of the large-scale elementary forms had increased their visual effects. Architects aimed to overcome the viewer emotionally through a virtually megalomaniac increase in scale, combined with the formation of smooth, unbroken surfaces and infinite multiplication of features of articulation.

As a counterblast against the delicacy of the Rococo, architects began to insist on a grandiose scale. This has often produced architectural dreams on paper totally unconcerned with what might be executed: royal palaces or buildings for more democratic purposes as academies, museums, libraries or the more than once planned monuments to Isaac Newton.

The seducer of all these architects was Giovanni Battista Piranesi. He was a Venetian architect, who built little, but etched innumerable plates of architecture. He was famous all over Europe for his plates of Ancient Roman buildings and ruins.

Two architects represent this tendency the most definitely: Étienne-Louis Boullée and Claude-Nicolas Ledoux. Neither Boullée nor Ledoux knew Italy. But their style cannot be understood without Piranesi. The period of their architecture was called **'Visionary architecture' or 'Revolutionary architecture'**, but they did not take part in the French Revolution, and their architecture is earlier than the Revolution. They were revolutionists only in architecture. In other words their activity was an 'architectural Utopia', but it was only a transition from the Baroque to the Neo-Classicism.

Étienne-Louis Boullée (1728-1799) was the greatest representative of this architecture. He had intended at first his career as a painter. Like Piranesi he is not much interesting as a practising architect. He was not as successful as several of the others of his generation. Boullée virtually gave up building in the 1780s and 1790s and turned instead to that abstract architecture of monuments without practical function, for which he is famous. Boullée seems to have been the first to break from the traditional bonds of architecture to produce a new visionary style with his idealized schemes. These schemes gave shape to his theoretical and social utopian concepts.

Boullée's name has become familiar only in the mid twentieth century. His glory is a set of large drawings prepared in the 1780s and 1790s for lectures or a publication. These are megalomaniac and are characterized by strictly cubic shapes without visible roofs and historical architectural motifs. The complex hierarchy and differentiated orchestration of façades, with vertical accents in line with Baroque principles of subordination, are reduced in Boullée to a few huge masses in which horizontals dominate.

Boullée's most famous project is a **design for a Monument to** the physicist Isaac **Newton**, projected in 1784. It was never published. The huge monument is completely spherical inside and about 150 meters high if the human figures drawn in can be taken as an accurate measure. But perhaps Boullée did not insist on the accuracy of proportions as neither did Piranesi. Its global shape depicts the sphere of the universe, and in the interior the vaulting is perforated into a giant starry sky. Beneath this 'vault of heaven' the sarcophagus of Newton rises. The sphere is surrounded by three rings of cypress trees and the entrances are very small.

Boullée wrote his essay about his art with the title: *'Essai sur l'art'*. There is nothing in his essay on scientific aspect of architecture, on practical, rational notion of architectural theorists in France. His architecture was disorderly. His compositions consist of a rigid symmetry and pure geometrical form. In the comments to his pictures Boullée wrote about a felt not a reasoned architecture. Practical needs worried him little. He saw embodied in the sphere all manner of marvellous qualities, monumentality of the universe. The circle and the semicircle as simple geometrical forms were bound to please Boullée and the others of this group.

Boullée's **theatre** of 1781 **for the Place du Carrousel in Paris** is fitted into a vast colonnaded drum with a flattened dome above. It has a symbolical form, and reminds us of the ancient Roman rounded temples, but has other proportions and dimension. The centrality of the theatre served as means of monumentality.

Boullée could place all functions required for a theatre in the spherical ground-plan, then he surrounded the theatre by a giant colonnade of 48 Corinthian columns. The axiality of the function of theatres is contrasted with the round form. The auditorium is semicircular with a coffered dome. The section shows the vast cupolas above the auditorium and above the whole theatre. The building, Boullée writes, was to be made fireproof by being constructed entirely of stone and brick, and fire-safe also by a large number of exits.

And after 1781 Boullée planned also a megalomaniac **cathedral** on a Greek-cross plan with porticoes of 16 giant columns against all four fronts. The colonnades are unending; 3000

columns would have been required in the interior alone. The massive dome on the cruciform building with an encircling colonnade is derived both from Soufflot's Sainte-Geneviéve and Bramante's project for St. Peter (for Tempietto) in Rome, which Boullée expressly admired, but the scale has undergone a considerable enlargement here. This large church transformed the Sainte-Geneviéve rather into a building of monumental dimension.

Similarly the theatre and the church that Boullée designed were not in any sense realistic. They were 'exercises de style'. Columned centrepieces with large pediments were stuck on smooth cubes like appliqués.

Boullée's **project** of 1783 **for a large museum** is an even grander and more purified variation on the columnar theme. But the innumerable columns, the interminable steps and the great vaults are on this occasion useless; the whole serves only a symbolic purpose.

His design is a centrally planned museum which is a square block with semicircular porticoes on all four sides. Each portico is with 38 columns repeated fourfold in depth so as to comprise 152 columns. The museum is a square with a Greek cross set in, a rotunda at the crossing and vast semicircular porticoes in the middle of each of the four sides of the square. The rotunda was to be a temple or a national monument, the museum proper was intended to be the four arms and the four ranges of the outer square. The building was also to provide for a library, a print room, anatomical specimens, stuffed animals, shells, etc. The dome of the building rises right from the ground and is completely bare. Externally it does not appear at all; there is just a drum with columns around.

In 1784 Boullée was officially asked to design new premises for the Bibliothéque du Roi in Paris. He selected the site of the existing library, which had been adapted from the Palais Mazarin. Boullée suggested filling in the large courtyard by one long room, nearly 300 feet (100 metres) long with a barrel-vault of untold dimension. A novel and influential motif of this **new hall of the National Library** is the opening of the vault.

The books were to be displayed on the walls. Boullée shows stepping-back levels instead of galleries, three of them, each level about 7 to 10 or 12 feet (about 2.5 to 4 metres) high. There was to follow above a long colonnade, as in the Antique theatres, but with more books between the columns, and finally the vast coffered barrel-vault with the long central skylight.

Even this projected library was very impractical. The celebrated perspective of the interior of the library shows its monumentality. Human figures served only to increase the apparent size of Boullée's architecture. The figures were shown in togas, recalling the Antique world, or Raphael's painting *'School of Athens'*.

For the façade Boullée offered different treatment, a closed front with a portal flanked by two atlantes carrying a globe. The exterior consists of a largely unarticulated cube. Apart from the garland frieze and two tablets with inscriptions, it is only the doorway that provides relief. Its globe, borne by two Atlas figures are clearly relating to the 'universe of knowledge'.

After the Revolution Boullée's designs for even more magnificent public buildings, triumphal arches, gateways, towers of light, tombs and pyramids pass into the realm of the truly sublime. For example, he projected an **entrance to a cemetery** or a funerary monument in the form of a squat pyramid flanked by two obelisks.

In Boullée's designs there was a direct relationship between forms and the sensations they aroused. This was the basis of his theory. He built up his designs with cubes, cylinders, pyramids, and cones, but his ideal was the sphere, for it was the most regular of figures.

Though Boullée published nothing in his life, he was active as a teacher. Many of his designs seem to have been prepared as a direct result of his teaching.

Most of the books about history of architecture write that Boullée exerted enormous influence on architects of the early 20th century, and Boullée's plans gave examples for their works. The simple truth is that Boullée's and Ledoux's activity was forgotten for one century. It is doubtful whether they produced effect on the modern movement. Before the mid twentieth century only architects of the Hitler's Germany learnt and put into practice Boullée's and Ledoux's visionary architecture. Only after the middle of the century did their activity become well-known.

Next to Boullée **Claude-Nicolas Ledoux** (1736-1806) was the other famous representative of this visionary architecture. Ledoux's is the more familiar name and he was more successful than Boullée. In spite of an eccentric character he had plenty of commissions for town houses, country houses and other buildings. Only few of the richer houses built in Paris during the years 1760 to 1820 survive and not the most characteristic ones. Of Ledoux's buildings for other than domestic purposes, the most interesting were his barriers or **tollhouses of Paris**. Ledoux was commissioned in 1784 to build more than 50 such barriers. They were built between 1784-89 with an infinite variety of plans and elevations, but always in a forceful, massive style, with Tuscan or Doric or heavily rusticated columns, with stereometric masses with classical or cinquecento features.

Ledoux showed that by changing the scale and the measures of traditional forms, and assembling these simplified geometrical forms, applying ornament only sparingly and then in a new relation to the surface or mass, an architecture of extraordinary novelty and power could be fashioned.

These tollhouses (in French barriéres) were continued to be built even after the Revolution, but most of them were demolished in the mid-nineteenth century, only four remain. One of them is the **Barriére du Trône**. Its silhouette is hard and sharp, and the detailing is strong. It is totally subservient to the geometry of the whole.

Another tollhouse, the **Barriére de la Villette** consists of a cubic block with a cylindrical drum, borrowing its Serliana motifs from Palladian architecture. The marked simplification of individual forms, such as in the low pillared porticos and the preference for the Doric order or the emphasis of the ashlar walls were calculated for suggestive effect.

The extraordinary projects for which Ledoux is famous were not published as a group until 1804, two years before his death. His book *'L'architecture considérée sous le rapport de l'art'* contained his writings and 125 plates illustrating the extant buildings and his **project for an ideal city**.

Ledoux's most exiting and best-known work was this project. His later ideal city was centred in the Royal Salt Works at **Arc-et-Senans**, on the edge of the forest of **Chaux**, on the river Loue, near Besançon. Ledoux was made Inspector of the Royal Salt Works in 1771 and shortly after he began to think in terms of new premises containing the works, the director's house and numerous employees' houses in a geometrical pattern. He designed the complex for the purpose of salt production and to permit a rational and hierarchical organization of work. This building not only housed the salt-production equipment, but also workers' homes.

The row material, brine (or salt water), was extracted from the former salt pan at Salins, then transported to the Saltworks at Arc-et-Senans through underground wooden ducts spanning 23 km. Once the brine reached its destination, it was heated. The salt was obtained by evaporation, and was sold as grains or block-ground.

Ledoux projected three versions. His first scheme was planned in a quadratic form, in the middle with the public buildings. It was a square in a square, a favourite piece of planning also with Boullée and his successors. But Ledoux quickly changed his scheme, first to an oval, then to a circle. In the middle the house of the director, the administration building was planned and surrounded by living-houses. The industrial buildings were placed along the diameters.

In the last version, finally the circle was reduced to a semicircle, and this was realized, but only in a fragmentary form. According to that plan construction began between 1775 and 79. The Royal Saltworks complex was inspired by the ideal towns of the Renaissance and designed like a theatre. The complex consists of 11 buildings in a semicircle around the director's house, and includes workshops and living quarters for the workers and their families.

At the top of the semicircle of Chaux was the **director's house**. It has a simple cubic shape, large roof and stressed portico of alternately blocked Tuscan giant columns carrying a pediment. Left and right of the director's house were the works, and the semicircle itself contained the employees' houses, each made of nine bays and one story but with a raised centre. Matching the function, the articulation of the stereometric masses and the use of Doric and Tuscan orders lent the complex a decidedly masculine character.

The **principal gatehouse in Chaux** is dated back to 1776. It has a deep portico of sturdy Tuscan columns carrying an entablature, not a pediment and behind it a grotto-like,

romantic niche cyclopically rusticated and with stone-carved urns out of which flows stone-carved water. The whole is a perfect marriage of the severely Neo-Classical and the Romantic, the elemental and the primeval.

The Saltworks closed down in 1895. Hardly anything of what had been built survives. The demolition took place in the 20th century between the two World Wars. In 1926 the Royal Saltworks was listed as a historic monument. Since 1927 restoration programmes had been started and they continued until 1996, before the Royal Saltworks regained its original appearance. Since 1982 it has been listed as a World Heritage site by UNESCO.

Long after building had stopped, Ledoux worked on plans which were never to be realized. He gradually transformed a real group of utilitarian buildings into a **Utopian city** with a church the size of a cathedral, a vast square market area, public baths, again in terms of a vast square, a stock exchange, a hospice and domestic as well as public buildings, mostly of vague function. All of these ideal plans for the buildings of the ideal city are composed of strictly geometrical elements.

Ledoux published this Utopian city in a big folio in 1806. The confused text is full of social reform. The public buildings in this city serve such vague functions as 'Palace dedicated to the Cult of Moral Values', Temple of Love, Temple of Virtue. This vagueness is familiar from the rhetoric of the French Revolution. Ledoux was personally not in favour of the revolution, but the group whose representative he was, is yet rightly called the architects of the Revolution. They were in revolt against accepted authority and convention and fought for originality.

He also designed a project for the **cemetery in the ideal city** of Chaux in 1804. The plan is similar to Boullée's monument to Newton, but this seems unlikely. Here is also a large sphere in the middle, but from it some wings start, which include the graves.

Ledoux planned **the river inspectors' house** like a cylinder on its side in 1773. This design was never executed for good reasons; it was only a formal idea. The centre is a barrel-shaped mass, through which the river would flow and come down with waterfall at one end. The mass of the building marked the post of its inhabitant.

Ledoux thought similarly but contradictorily as he planned a factory. He wanted to give architectural motifs for these simple industrial forms. Ledoux suggested pyramids for furnaces of a **gun-foundry**. He used those elementary geometric shapes instead of the more complex and gentler curves of Baroque.

Boullée produced endless projects for cenotaphs and cemeteries, but Ledoux concentrated rather on communal buildings and houses in attractive surroundings. His designs offered more possibilities for adaptation. His architecture was thought to be undisciplined. All the same Ledoux suggested to architects how they might break from the classical norms to produce a new and radical architecture. Boullée provided the highest ideal, Ledoux offered the practical model.

Boullée's favourite pupil was **Jean-Nicolas-Louis Durand** (1760-1834) who was the leading figure representing the new direction in education. He was made professor of architecture at the École Polytechnique, where he taught mainly instructing surveyors and engineers, including Schinkel and Klenze from Germany. Durand exerted his enormous influence on architects through his books that were the outcome of his teaching. His works propounded the strictest standards of formal geometry and design.

His first famous book was the '*Recueil et paralléle des édificies de tout genre anciens et modernes'* published in 1800. He published his other book *'Precis de lecons d'architecture'* in the form of a pattern book between 1802 and 1805. The legacy of eighteenth-century architectural thought in France was contained and summed up in them.

In the illustrations Durand selected his examples from all periods of history – from Egyptian, Greek, Roman, Gothic or Renaissance times. He showed their oddities and stylistic characteristics, presented them all drawn to the same scale, and arranged for comparison, as particular building types. Temples are grouped together on one page, churches on another, theatres on yet another, and so on.

Durand proposed that the architecture was conditioned by social demands and economy. His criteria in designing were symmetry and a simplified geometry. The circle and the sphere were the finest figures because they enclosed the maximum area – or volume, in the

case of the sphere – for the minimum circumference or surface area. He accepted that these figures might be impractical in building design and chose as the next best, the square and the cube. Architecture, he claimed, was a graphic formula. His method of composition was to start with the plan (almost invariably a square), to transform this into a grid, to draw on the axes required linking the rooms, and then to impose upon this grid the elements of architecture: the walls and columnar supports, together with such elements as doors and window openings. To arrive at the section and form of the building, the established grid was projected vertically. Durand had no feeling for form and volume. His plans were altogether unsatisfactory from the point of view of human requirements, though as geometrical patterns they are impressive. Durand reduced architecture to two of its component parts, structure and formal geometry.

His published **ideal ground-plans for public buildings** were to impress architects throughout Europe and in Germany in particular. Durand's books were to provide suitable formulas for building countless hospitals, prisons, barracks and museums. He schematized the disposition of buildings in his characteristic standardized drawings. His **plan for a museum** as an elementary geometrical plan had a large effect on later museums, as on Schinkel's Altes Museum in Berlin, or on National Museum in Budapest.

The pavilion principle in later hospital architecture was Durand's own preference, as is proved by the **hospital design** he published in 1809. This has seven pavilions on each side of a central avenue or elongated courtyard. At the end of this Durand places no buildings, only arrays of massed columns in the Boullée taste.

The architecture of Classicizing Romanticism in France

After the Revolution it was an auspicious time for architecture. The French architecture of Classicizing Romanticism had a less severe, more rhetorical and more ornate character than the style of Ledoux and his group. The style of the next generation has much in common and was influenced by Gabriel and Soufflot, by England and Rome.

One of the typical public secular buildings of Neo-Classicism is the **Bourse** (Stock Exchange) in Paris built by **Alexandre-Théodore Brongniart** (1739-1813) and completed by **Étienne Eloy de Labarre** between 1808 and 15.

It was designed as a free-standing peripteral with Corinthian colonnade in all four side of the building, with a straight entablature instead of a pediment. Brongniart did not imitate a Greek temple, but designed a simple mass building with colonnade, a temple façade as the preferred motif for public buildings. He enlarged it on a colossal scale to express the glory and grandeur. The large size is due to the building housing the exchange. The choice of Corinthian instead of the severer Doric or Tuscan is typical of the change from Revolution to Empire.

For the inner structure Brongniart followed the type of the classical basilica in accordance with the function, but avoided the characteristic retracted upper level. The ground-plan and mass of the Bourse is central, with a large hall in the centre, which is tall and glazed at the top, and is arcading on both floors.

The most characteristic example of the French church architecture in the Napoleonic period was the church of the **Madeleine in Paris**. After a competition in 1807, Ledoux's pupil **Alexander-Pierre Vignon** (1763-1828) was commissioned to build the Madeleine, incorporating some of the foundations of Contant d'Ivry's unfinished church.

In accordance with Napoleon's wish, the main mass is a massive Corinthian peripteral temple. But the Madeleine became a lifeless paraphrase of an antique Roman Temple. It is decidedly Imperial Roman in character, no longer Grecian and no longer as original as Ledoux. The ground-plan with the series of the three pendentive domes is an unusual solution. In the interior the theme of the Roman bath was developed.

The strict colonnaded exterior is contrasted with the richly decorated interior. In accordance with the wishes of Napoleon I, the building was designed to be a national monument, to a temple of glory dedicated to the heroes of the Grande Armée. When it was decided at the Restoration by royal decree in 1816 to make it into the original function, into a parish church, the interior was altered. After Vignon's death Jean-Jacques-Marie Huvé (1783-1852) completed most of the building in modified form, and decoration continued until 1845.

In these times two architectural axes were formed in Paris, the so-called great and small axes. The **small axis** leads from the Madeleine between Gabriel's two houses on the Place de la Concorde. Its pedimented façade on a podium is dramatically positioned so as to dominate the axis of the Rue Royale between Gabriel's buildings. On the same axis, on the opposite bank of the Seine a giant Corinthian portico was added to the old Palais-Bourbon in 1808. This was intended to commemorate the architecture of ancient Rome.

The **great axis of Paris** started from the Louvre, or from the Tuilleries palace before it. (The Tuilleries palace was demolished later, in 1870.) The representative avenue, the Champs Elysées was formed on the place of a main road of the earlier Baroque garden designed by Le Nôtre. The place of this garden gave the possibility to the expansion of the city along this long, straight road. With this new avenue the emphasis of the city was removed to this right river-side of the Seine.

The great axis, the Champs Elysées is broken down with different space-forms, and architectural motifs. Chalgrin's Arc de Triomphe stands on the Place de l'Étoile. The triumphal arches were the most characteristic architectural tasks of Neo-Classicism recalling the Ancient times. They were built in most European cities. Here in France the arches are the most well-known examples of Napoleon's Neo-Classicism.

Jean-Francois-Thérése Chalgrin (1739-1811) is famous for this **Arc de Triomphe on the former Place de l'Étoile**. The foundation stone was laid in 1806, but completed only in 1836. Chalgrin aimed at the accepted grandeur of ancient Roman buildings, incorporating statues and relief panels. His projects of 1810 were more austere, as were all Chalgrin's works, faultless in proportions. Later, another architect, called G.-A. Blouet completed the attic storey of the Arch, destroying the balance of Chalgrin's restrained Neo-Classicism.

The model for this triumphal arch was the Arch of triumph of Titus in Rome. The only opening and the proportions are similar, but the measurement is different. Chalgrin's arch is more monumental, it is more than 50 metres high, and the opening is nearly 30 metres. And it is more decorative, its most famous relief was made by François Rude.

Another triumphal arch, the **Arc de Triomphe du Caroussel** was built in the same time along the great axis on the Place of Caroussel, designed by two architects, **Percier and Fontaine**. Evocation of Imperial Rome was a prime purpose of these commemorative structures. The Arc de Triomphe du Carrousel is smaller than Chalgrin's arch and has three openings. The ancient model for this was directly the triumphal arch of Septimius Severus in Rome.

Charles Percier (1764-1838) and Pierre-François-Léonard Fontaine (1762-1853) were the most powerful and influential architects in France in the early years of the 19th century. They were the most successful all-round planners of the Napoleonic era. They were architectural partners. In 1790 they set up business together and within ten years had established a fashionable practice. Their joint activity ranged from urban development and civil architecture to the decorative arts, in which they made a particular name for themselves. On top of this Percier and Fontaine published designs and models in several publications, which guaranteed their influence both at home and abroad.

Percier and Fontaine became together modish designers of interiors. From 1801 they were Napoleon's official architects; the work for which the two men became famous was all done for Napoleon. They refurbished and redecorated the Tuilleries and the Louvre, prepared residences for Napoleon and his representatives and they built the Rue Rivoli in Paris. Percier and Fontaine were Durand's worthy followers, both as practitioners and as teachers. They taught a whole generation of architects.

Percier and Fontaine's most notable work in urban development also marked the beginning of what became a period of major changes in the Parisian cityscape in the 19th century. The **Rue de Rivoli**, built between 1802 and 12, provided a link to the Place de la Concorde, and was the foundation of a large-scale project for regulating the quarter around Napoleon's city residence in the Tuilleries. The grandiose building extends along the Louvre, parallel with the Champs Elysées.

The uniform fronts of the houses are linked and drawn together by continuous cornices and balconies. It introduced new features of Italian origin into the urban landscape, with their

open arcades at street level and characteristic rooflines. The street level with an endless looking arcade with semicircular arches and the other storeys constitute a wall along the street. The long, balanced and homogenous façade continued the tradition of the great squares of the 17th and 18th centuries, but this unified façade planning was characteristic in this period.

The **Galerie d'Orleans** in Paris was also built by Percier and Fontaine between 1828 and 30. This is an early example of using iron as new material in covering a long passage. The Galerie d'Orleans was the first to be covered by a glass barrel-vault, and the motif was epoch-making. The façade of the shops is decorated with classical details in a light rhythm.

The return of the Bourbons after Napoleon's fall caused a return to earlier ways in architecture, as elsewhere.

A pupil of Percier and Fontaine was **Louis-Hippolyte Lebas** (1782-1867). His first important work was the small church of **Notre-Dame-de-Lorette** in Paris. He won the commission in a competition in 1823. The church was intended to set new standards for architecture, to provide a model for a new and marginally richer neo-classical architecture. The plan was based on the established basilican pattern. Lebas started with a basilican plan, erecting on it a portico that was said to be proportioned on that of a Doric temple but it was endowed with Corinthian columns.

The interior of the Notre-Dame-de-Lorette was an extraordinary version of an early Christian basilica, painted and gilded everywhere. The coffered ceiling recalls the Roman ceiling of the Renaissance, such as the one in the Lateran. Despite its imitated coloured marble inlays, it was the building's rich quattrocento-style interior painting that aroused particular interest.

Lebas was also a reformer of prison architecture. This plan, **La Petite Roquette Prison** was designed for the house of detention for young offenders in Paris. Lebas continued to use the patterns of organisation and the stylistic details that he had inherited from Durand.

The organisation of life in the prison determined the architecture in every way. The main aim was the continuous surveillance of all prisoners from a single observation post. The obvious expression of this was the radial plan. This was introduced in France in 1825 when Lebas won a competition for a model prison. He produced a plan of giant formality, a hexagon with six wings linked to the centre. There he placed a chapel. The prison consisted of an administrative block linked to a domed rotunda as an observation post from which radiated six wings at a sixty-degree angle containing individual cells.

After that the great period of prison reform had begun, and an architecture embodying the new humanitarian ideals was initiated. A lot of prisons were built in rounded or star-shaped form around a centre.

Examples of the Gothicizing Romanticism in France are rare. France kept away from the Gothic revival in all its tendencies for a long time. Picturesque Gothic buildings in the gardens were rare; the romantic Gothic interpretation appears only in the 1820s. The Société Française d'Archéologie was founded in 1834, and started the inventorying of medieval buildings in a scholarly way. The Commission des Monuments Historiques had been established in 1837.

The Gothic Movement in the 19th century France sprang from romantic beginnings. Later it became part of the École des Beaux-Arts (the Fine Art's School), where fragments from the past were reassembled after the Revolution. What helped to accept the Gothic was that the French turned towards their national past and history. The monumental Gothic cathedrals inspired them to study their style. The appearance of Victor Hugo's novel *'Notre Dame de Paris'* in 1831 merely served to reinforce the popularity of medieval architecture.

The Romantic Movement was not separable from the restoration and preservation of monuments, and it was a new symptom in Historicization. **Eugéne-Emmanuel Viollet-le-Duc** (1814-79) architect and theorist became the leading representative of a structuralist view of Gothic. He was commissioned to restore more Gothic monuments, the Sainte-Chapelle and the Notre Dame in Paris, the abbey in Saint-Denis and so on. Next to his almost one hundred executed buildings and restorations he exerted his enormous influence on architecture through his books or his theories.

Viollet-le-Duc was inspired by Gothic works; he was to retain always a romantic, emotional sympathy for the Gothic. In his early years his energies were directed not only to the restoration of Gothic architecture, but also to a revival of the style itself. He tried to demonstrate how Gothic might be used as the basis for the nineteenth-century style. Although he built some houses in Paris (as the **Maison Courmont** between 1846-49), in which Gothic details were applied to a rational Parisian street frontage, Viollet-le-Duc seems to have rejected the style thereafter as unsuitable for city architecture.

Neo-Classicism and Romanticism in Germany

The German early Neo-Classicism developed under significant French and English influence. In the second half of the 18th century Germany had political as well as economic division. There were more than 20 small states in the area of today's Germany. From the point of view of the neo-classicist architecture the most important ones amongst these states were Prussia with its capital Berlin and Bavaria with its capital Munich. Later also Saxony with its capital Dresden played a significant economic as well as cultural role beside Prussia and Bavaria.

Johann Joachim Winckelmann (1717-68) was the theoretical leading figure in German Neo-Classicism and he established the style with his writings. He was a German archaeologist and art-historicist. His book *'Gedanken über die Nachahmung der griechischen Werke in der Malerei und der Bildhauerkunst'* (Thoughts on Imitating Greek Works in Painting and Sculpture) was published in 1755 in Dresden. Winckelmann had lived and worked in Rome since 1757, and in 1763 he became President of the Antiquity Society there. His classic *'History of Ancient Art'* of 1763 was the first book to recognize and analyse the true qualities of Greek art, its 'noble simplicity and tranquil greatness'. Winckelmann not only founded a new branch of scholarship – art history – but he also created a new ideal of Greece. So the fashion for antique interiors in this period now had a theoretical basis. Later also generations of architects encountered his writings.

The most significant development can be noticed within German states in **Prussia**. Significant French and English influence succeeded here in the early Neo-Classicism. Later the style became more striking than in other European countries thanks to the Prussian mentality.

The first important representative of Prussian Neo-Classicism was **Karl Gotthard Langhans** (1732-1808). His main work is this **Brandenburg Gate in Berlin**. It was designed in 1789 on the model of the propylaeum on the Acropolis in Athens. In accordance with contemporary taste, Langhans added Attic bases to the Doric columns. He had never been in Greece, and thus these Doric columns became lighter than they were in the real classical Doric order. Gottfried Schadow designed the Quadriga, this equestrian statue on the top of the Brandenburg Gate. In 1806 this statue was carted off to Paris by Napoleon, only to return in triumph in 1814. Since then, the Brandenburg Gate has become a national monument.

The other important representative of Prussian Neo-Classicism was **Friedrich Gilly** (1772-1800). His father was David Gilly (1748-1808) who emigrated from France as a Huguenot. He was also an architect and he is famous because he ran a private architectural school in Berlin that can be considered the core of the Berlin Architectural Academy. He also established an architectural periodical.

His son Friedrich Gilly had a small oeuvre, because he died, when he was only 28. He founded the Private Society of Young Architects and exerted great influence by inviting leading architects such as Klenze and Schinkel to discuss fundamental problems of architecture.

Friedrich Gilly had his training in Berlin in his father's school, and never saw Italy. However, he had an opportunity of going to Paris and London, and there perhaps he got to know the style of the Ledoux and Boullée group in Paris and possibly the style of Soane in London. But their influence ought not to be exaggerated, because before he went, he had designed one of the two masterpieces, which were left to us. These masterpieces were left to us only in drawings, and were never carried out, but they bear witness of his genius.

The first of this two masterpieces is a **design for a monument to Frederick the Great**, King of Prussia. It was designed in 1796. It is considered an early example of Neo-Classicism

in Germany. The design was exhibited at the academy exhibition in Berlin, where it aroused enormous interest with its monumental use of classical grammar. The Doric temple on a tall polygonal stone plinth inspired later Leo von Klenze's design for Walhalla. This was the earliest example of such columns in Germany.

The monument chiefly consists of a Greek Doric temple raised on a high severely cubic platform and a triumphal arch. Inside the temple the sarcophagus was to be placed. As Gilly said in his explanation, the monument was to be 'without any playful decoration'. The design was never constructed.

The other of Gilly's masterpieces is a **design for a National Theatre in Berlin** (1789), which also remained on paper. It is clearly a conception of the Goethe age. The exterior was to be built up in units each expressing its function. Decoration was to be used most sparingly. The function became important, which Gilly showed clearly in this articulated mass.

The principal motifs are the low Doric portico and the lunette window. The Doric portico without a pediment is strong and grave. The use of semicircular windows was a favourite motif of the revolutionary architects of Paris, though imported from England. The contrast between the semicylinder of the auditorium and the cube of the stage is functionally and aesthetically superb. Gilly was close to a new style of the new century.

The most important architect of the German Neo-Classicism is **Karl Friedrich Schinkel** (1781-1841). He was the greatest, most sensitive and most original representative on the Continent of the Neo-Classical style, of the most correct neo-Greek. He was a pupil of Friedrich Gilly in Berlin from 1798 to 1800. His long official career as an architectural civil servant began with his appointment in 1810 to the Prussian 'Oberbaudeputation' (in English Public Works Department), which regulated state and royal building. In 1830 he was appointed head of this department.

The colossal scale of his building operations in Berlin and throughout Prussia identified him with that move to establish Prussia as the leading state in a newly united Germany, which culminated later in the foundation of the empire in 1871.

Schinkel's architecture has a strongly intellectual quality and a stylistic astringency regardless of the style he was working in: Greek, Gothic, Functional or Rundbogenstil (it is a special German style, meaning 'Round-arch style'). At the same time, he had a strong feeling for the picturesque relationship of buildings to their surroundings. He had acquired this during the years he spent before 1815 as a panorama painter and stage designer, at a time when building activity in Prussia had virtually ceased.

He was deeply interested in the theoretical principles and the practical aspects of architecture, and from 1820 to 1830 he worked on the text and illustration of an unpublished book entitled *'Architektonisches Lehrbuch'*. He also produced a series of designs for mass-produced articles. He also gave wide publicity to his own architectural designs in books.

One of Schinkel's principal executed works is the **Neue Wache** (the Royal Guard House) in Berlin, which was built between 1816-18. The guard house stands on the representative avenue of Berlin, on the Unter den Linden Street near the palace of the Prussian king.

The building with its massive, compact mass and severe Doric portico has symbolical meaning and expresses power. The portico echoes Langhans' Doric theme on the Brandenburg Gate, but Schinkel goes a step further in the archaeological accuracy of its Doric order. With the massive pylons beside the portico he emphasized the military nature of the building. The means for the architect are here the flat surfaces and shadows instead of the openings and mouldings. Ornaments or plastic art appeared only in the tympanum.

Two years later, in 1818 Schinkel designed this new theatre in the centre of Berlin. The **Schauspielhaus** (the State Theatre) is an even greater masterpiece of his, of which Schinkel wrote: 'I tried to emulate Greek forms and methods of construction insofar as this is possible in such a complex work'.

Apart from the Greek Ionic portico, the most memorable feature of the building is the frequent use of a kind of functionalist pilaster strip. For these Schinkel also argued that these pilasters admitted the maximum amount of light. The reduction of the Greek vocabulary to almost abstract elements was new method in this period. These openings between the pilasters

are built without historicist window frames so these fronts look like a framework or skeleton in the 20th century. This is not the only one of Schinkel's solutions, by which he preceded his era.

This representative public building has also an interesting complex mass, which is divided into three large blocks which serve different functions. It reminds us of Friedrich Gilly's theatre design, when he also broke down the mass of the building corresponding to the inner functions.

Schinkel's main masterpiece is the **Altes Museum in Berlin** designed in 1823, which had to absorb a highly diversified collection of art.

Public museums to present the history and cultural achievements of a nation had been built in many countries in the first quarter of the 19th century. The task was a new one, arising out of a new, bourgeois society. Leo von Klenze's Glyptothek, (sculpture gallery) in Munich was built between 1816 and 30. In 1823, also Sir Robert Smirke made a start on the British Museum in London.

The plan of the Berlin Altes Museum was seen by the Prussian King in January of 1824 and approved in April. The foundation stone was laid in 1825, and the Museum was opened in 1830. The name of the building, Altes Museum means Old Museum in English, but it was called so later, when a Neues Museum (New Museum) had been built.

On the main façade the eighteen fluted Ionic columns between the square angle piers are the noblest introduction to a temple of art. The majestic severity of the colossal portico is emphasized by a small attic which screens the central rotunda. The motif of the long colonnade is reechoed in Sir Robert Smirke's British Museum in London, which was also designed in 1823. The other façades remained simple with rectangular openings without ornaments.

The interior of the Altes Museum is reached across an open flight of steps. The remaining collection rooms are arranged as three-aisle halls. They are grouped on two stories round two inner square courts, with unique lighting conditions required for works of art. The system of sightseeing through the different exhibition rooms is well planned as a compulsory roundabout. This roundabout can be left through the rotunda in the centre of the building.

The design is clearly inspired by the French architect Durand. Jean-Nicolas-Louis Durand published in his work a design for a museum round a circular hall with a dome. From Durand comes the rotunda in the centre, which Schinkel called 'the sanctuary of the building'. It is based on the model of the Pantheon in Rome, which was a temple of all of the Ancient gods. Schinkel quoted this motif because the museum was seen as a temple of the Muses. The word 'museum' also originates from the name of the Muses, from the name of these Ancient Greek goddesses of Arts and Sciences. Here in Altes Museum this rotunda contains an exhibition of sculptures. Thanks to the Altes Museum the Durand rotunda became a favourite motif of museums. An example is Mihály Pollack's National Museum in Budapest, begun in 1836.

Schinkel's main work between his ecclesiastical buildings is the **Nikolaus Church in Potsdam**, which he designed in 1826 and built between 1830 and 1837. Its geometry is pure and it consists of simple geometrical forms: of a cubic mass with a Corinthian portico, of a big cupola with two drums, and of four small steeples, which corrects the proportions. The small Renaissance church of Bramante, the Tempietto in Rome, built in the 16th century, served as an example for this cupola, and for other cupolas of Neo-Classicism. For example, the Pantheon in Paris has a similar cupola. They all have two drums, the lower is colonnaded, and the other is massive and holds the dome.

After 1828 Schinkel experimented on an increasing scale with terracotta and brick. In 1831 he designed the building of the **Bauakademie** (of the Academy of Architecture) in Berlin. Apart from the terracotta decorations, the red brick box was a functional building that displayed its structure and got by without direct borrowing from historical architecture. The building was demolished in 1960 and now only one of its corner stands there as a monument.

The building is notable for terracottas of Italian Renaissance inspiration, mouldings in the Greek spirit and yet a monumental 'neo-classical' simplicity. The façades are articulated only by lesenes and large windows, this solution was a novelty in this era. The façade as a simple and cheap solution, which is not entirely without decoration, gave example for later schools or factories in the cities until the 20th century.

Beside the Bauakademie Schinkel built the **Friedrich-Werdersche Church** in Berlin between 1825-28. When Schinkel was commissioned in 1822 to do this church he presented alternative studies one in the classical and another in Gothic style. The handling of space is virtually the same; the only difference is being that the proportions are a little more slender in the Gothic version.

A simple geometrical Gothic version was executed. The two-tower bare façade leads into an aisleless church. The interior is articulated by wall piers and retracted choir. In the execution of the brickwork and details, Schinkel followed the traditions of brick Gothic in northern Prussia.

Schinkel's design of 1827 is called **'Kaufhaus'**. The word 'Kaufhaus' can mean different things. Today it means a department store, but what Schinkel had in mind was a bazaar, with many small shops belonging to different owners. Schinkel's Kaufhaus was to be built at the east end of Unter den Linden, in this representative avenue in Berlin.

It was designed in Schinkel's most original, unhistoricist style and was to consist of three ranges round a large area open to the street so forming a U-shape building. There were to be two main selling floors and two mezzanines for dwellings. The large windows connected the floors and hide the existence of the mezzanines. The façades were simple only lesenes appeared here between the huge windows. This functionalist design preceded its era with about 100 years but it remained on paper.

The Greek Revival was carried on by Schinkel and handled with a new sense for bold planning in landscape. Schinkel designed two dream palaces, one in 1834 on the Acropolis for the King of Greece, the other in 1838 at **Orianda in the Crimea** for the Empress of Russia, who was a daughter of King of Friedrich-Wilhelm III of Prussia. These are examples of how the interpenetration of interior and exterior space can act to the solidity of the Greek Revival.

Both designs display a rich polychromy and are examples of Schinkel's special gift for distributing symmetrical Grecian forms in an asymmetrically landscaped composition. The atrium and the courtyard of this unexecuted fantasy palace of Orianda looks like parts of an imagined palace from the Ancient Greece. The caryatids of a terrace remind us of the Erechtheum on the Athens Acropolis.

In Prussia, where Neo-Classicism was so powerful, clear and severe, only fewer examples of Neo-Gothic can be found.

Cologne (Köln) became an international centre of Gothic tendency. Ever since the original plans for the unfinished Medieval Gothic cathedral had been found in 1814, in 1816 the completion of the cathedral according to these plans had been decided on. In 1842 the King of Prussia laid the foundation stone of the new work. After that Neo-Gothic churches and later on public buildings appeared from Hamburg to Vienna.

In Germany the other important region is Bavaria with the capital Munich, where Leo von Klenze was the most essential architect of this era.

Leo von Klenze (1784-1864) like Schinkel, was a North German who turned to architecture from the study of law after meeting the visionary and influential young Friedrich Gilly in 1800. He had studied in Berlin under David Gilly just after Friedrich Gilly's death. Like all German architects of this period he looked to Paris for inspiration and was trained there at the École Polytechnique by J.-N.-L. Durand and by Percier and Fontaine in 1802-03. He was court architect to King Jérome to Napoleon's youngest brother at Kassel from 1808 to 13.

After Napoleon's defeat in 1814 Klenze was by chance introduced to Ludwig, the Crown Prince of Bavaria, the future Ludwig I and thereupon Klenze settled down in Munich for the rest of his life. In 1816 he was appointed Supervisor of Court Buildings to Ludwig I of Bavaria and in 1824 became Director of the Building Authorities for Bavaria. With Ludwig I Klenze transformed Munich into the Florence of the 19th century with many remarkable buildings. Klenze and Ludwig I made the same kind of sweeping impact on Munich that Nash did on London, though the German architect and his patron worked in a style rather different from Nash's. Their principal contributions were the great Ludwigstrasse, running north from the Royal Residence, and the Königsplatz, which lay to the west of the Ludwigstrasse on the route into the city from the royal palace of Nymphenburg.

Klenze was an archaeologist of distinction, publishing many books on antique architecture, and his own inclinations were toward Greek rather than quattrocento sources.

In 1816 Klenze designed two major buildings that reflect the influence of his French masters. One of Klenze's most important Greek Revival buildings is the **Glyptothek in Munich** in the Königsplatz. It is notable as the first public sculpture gallery ever erected. The Glyptothek, though was built and paid for by the Crown Prince of Bavaria, the future Ludwig I, was from the beginning intended to be for the Bavarian people. It was commissioned by the crown prince, Ludwig who wished to house the Greek Aegina Marbles suitably.

Klenze offered three designs, one Grecian, one Roman, and one Renaissance. His Roman design has seven giant niches and set into them screens of two columns carrying an entablature – this is a Roman motif indeed, but was appropriated by Adam and taken up by Ledoux in one of his barriers, which Klenze no doubt knew. The Renaissance design had a one-storey portico of twelve Roman Doric columns and blank aedicules in the side pieces.

Klenze won the competition and the foundation stone was laid in 1816. Exterior and interior were complete in 1830. The building contained Roman as well as Greek antiquities, and its Grecian portico is flanked by Roman aedicules. The portico has eight unfluted Ionic columns. The walls left and right of it are windowless but have aedicules, which serve to display statues.

Shortly the grand style of the Italian High Renaissance palazzi replaced the simplicity of the neo-Greek in all of Europe. Arcades or loggias with columns appeared as a Quattrocento motif. Another than the Renaissance way to reintroduce the round arch into architecture was to look to the Northern Romanesque, the Italian Romanesque, the Early Christian, and the Byzantine style. The Germans were wise in giving a term to cover all these and some of the Italian Renaissance imitation by the one term 'Rundbogenstil', which means 'Round-arch style'. Schinkel began it in Germany in the 1820s with designs for Early Christian churches.

The first truly Neo-Renaissance palace in Europe seems to be Klenze's Beauharnais Palace, in Munich, of 1816. It was designed for Napoleon's stepson, Eugéne de Beauharnais, who had married the Bavarian crown prince's sister. Perhaps this first major monument of the Renaissance Revival was inspired by the Palazzo Farnese, like Barry's Reform Club of twenty-one years later in London. Klenze's adaptation of a Neo-Renaissance vocabulary makes Klenze comparable to Sir Charles Barry in England. Klenze doubtless knew the engravings of Italian domestic architecture of the 15th and 16th centuries. The fifteenth-century Florentine style was chosen by the crown prince for much of Klenze's street architecture in Munich.

This is Klenze's **Alte Pinakothek** (Picture Gallery) in Munich, which was the most influential museum building of the 19th century. It was designed between 1822-25 and executed between 1826-36. The Alte Pinakothek was built to house sculptures and paintings, but the Glyptothek to house sculptures only.

The building reflects a Neo-Renaissance vocabulary. In style it is Cinquecento, a style Klenze had already used in the Beauharnais Palace in 1816. The exterior is in a free High Renaissance, and so were the principal rooms inside. Where Klenze however did not follow any precedent of the past is in the plan of the building. The Pinakothek is twenty five bays long from west to east but quite narrow with wings at the ends projecting slightly to north and south. The entrance was at the east end, but this and the staircases were altered recently after war damage. The most important innovation was the planning of three parallel strips all along the 25 bays, the middle one of big skylit halls for large paintings, the south one for a loggia giving access to every hall, and the north one for cabinets with large round-arched windows for the small paintings. This arrangement was to be immensely influential and set the pattern.

Munich after that produced a number of excellent examples of the 'Rundbogenstil' in the 1830s: such as National Library by Friedrich von Gärtner in 1831.

Bavaria had become a kingdom in 1806. When Ludwig I was still crown prince he said that he intended 'to make of Munich a city which would be such an honour to Germany that no traveller would leave Germany without having seen Munich'.

Between 1826 and 43 Klenze remodelled the Munich Residence for Ludwig in a variety of styles ranging from that of the Königsbau to that of the Allerheiligen Hofkirche. King Ludwig I extended the existing palace by two large ranges, and they are no longer Neo-Greek or Neo-

Roman but Italian Neo-Renaissance. The **Königsbau** (the Royal Residence) built between 1826 and 35 by Klenze was shaped on the pattern of the Palazzo Pitti in Florence, on the pattern of the Quattrocento. The Festsaalbau of 1832-42 also by Klenze, is a grander and freer High Renaissance, indeed heralding Baroque features.

Klenze's great monuments in Neo-Classical, as opposed to the Neo-Renaissance tradition are the Walhalla near Regensburg, the Befreiungshalle near Kelheim, the Ruhmeshalle and the Propylaeon in Munich.

As crown prince Ludwig was interested in classical archaeology. In 1806, when he was twenty, he visited Paris and saw the Panthéon. In the next year he conceived the idea of 'marble portraits of the fifty most gloriously excellent Germans'. He intended to call the collection Pantheon, but the historian Johannes von Müller suggested Walhalla. What exactly is the Walhalla? In Norse mythology it is the place in which the souls of slain heroes feast. For Ludwig it was a pantheon of political and intellectual portrait busts. The effect of the building, as Ludwig wrote, should be 'that the German should leave it more German'. The first designs were made in 1809-10 by other architects. After the liberation of Germany from Napoleon the idea was taken up again by the Crown Prince, and in 1814-15 a competition was held.

In 1816 Klenze was commissioned to design the **Walhalla**. He tried for some years to persuade Ludwig that a Doric temple was 'not wholly suited to represent at first glance a Walhalla, a German Elysium. But again the Prince insisted. So Klenze gave in and the final plan was agreed in 1821. The foundation stone was laid in 1830 on a beautifully wooded site above the Danube near Regensburg and in 1842 the Walhalla was complete.

The Walhalla is a marble-faced Doric temple on an enormous substructure and has 8 by 17 columns carrying a roof of cast iron. This is the culmination of that neo-classical obsession with the Parthenon in Athens Acropolis, which in nineteenth-century Germany, was coloured by a growing nationalism. The interior is a polychrome large hall with top-lit through an open roof. Inside, broad paired pilasters articulate the long walls. In the recessed parts are the marble busts of the great famous Germans, for instance, Leibniz, Schiller, Goethe and Mozart.

Klenze's second great national monument, the **Befreiungshalle** (Hall of Liberation) was built near Kelheim also on the Danube. Liberation of course meant here the liberation from Napoleon. The building was erected to commemorate the War of Liberation against Napoleon of 1813-15. The earliest designs are of 1833 and the decision to build was taken only in 1836. The commission went to Friedrich von Gärtner. He designed a rotunda, and the King laid the foundation stone in 1842, on the day of the opening of the Walhalla. Gärtner died in 1847, and Klenze took over until 1863. He built on Gärtner's foundations, but changed the elevation radically.

The Hall of Liberation is one of the most telling examples of Neo-Classicism leaving the stage of imitation, as represented by the Walhalla, and exploring original possibilities. The building is a vast, bizarre rotunda; the mass originated from the form of the Ancient mausoleums. It consists of three cylinders. In its lower two-thirds the building articulated by buttresses carrying allegorical statues. There are no windows. Higher up runs a colonnade and the top has short buttresses. Inside at ground level are deep niches, their arches are segmental, not round. Winged white marble Victory statues stand in front of the arcade, holding hands and forming a ring. They have golden shields with the names of battles. A colonnade with straight entablature leads on to the coffered dome, glazed in the centre. It is once more the Rome Pantheon motif.

Klenze designed also the **Ruhmeshalle** (the Hall of Fame) in Munich between 1843-50. The form of this national monument also originated from the Ancient Greek architecture; it is a U-shaped bald Greek Doric stoa. The archetype is the Zeus altar of Pergamon. Before the monument stands a large statue, which personifies Bavaria. Behind the columns busts of famous Germans are placed similarly to the Walhalla.

The **Propyläen** (the Propylaeon) in Munich follows the Athenian Propylaea. It was built by Klenze for the sake of a representative gate between 1846-53, but conceived in 1817. Here a Doric portico is flanked by severe pylons. The middle of the portico deviates from the Ancient precedents: the middle opening is broader than the others to provide crossing.

By Leo von Klenze **Friedrich von Gärtner** (1792-1847) was the most famous architect in Munich in this era. He had studied in the Munich Academy and like all German architects of this period in Paris. His teachers were also Percier and Fontaine. He travelled in Italy and Sicily, and he published his experiences about Greek temples in 1819. In Munich he taught at the Academy, but got also architectural commissions.

The **Ludwigstrasse** is a representative avenue of Munich. Here a lot of public buildings were constructed to an overall scheme to designs by Friedrich von Gärtner. Here he used 'Rundbogenstil' (Round-arch style); all of his façades here were articulated only with semicircular openings. The origin of these rounded arches is different; they originated from Renaissance or from the Italian Romanesque.

The **Ludwigskirche** (the St. Ludwig's church) was built by Gärtner between 1830-44 in 'Rundbogenstil' (in 'Round-arch style'). In this building Gärtner drew his inspiration very freely from fourteenth-century Lombardian church architecture. In the eyes of contemporaries the building summoned up Italian religious architecture of the 14th century. This return to Romanesque style resulted in spectacular buildings in Munich.

Beside the Ludwigskirche the **Staatsbibliothek** (the State Library) stands in Munich. It was built by Gärtner between 1831-40. This is a variation on the archetype of the Quattrocento Florentine palazzo. The even rhythm of the semicircular openings makes the building a characteristic example of 'Rundbogenstil'.

The **Feldherrenhalle** stands at the eastern end of the Ludwigstrasse (Ludwig's street) in Munich. It was built by Friedrich von Gärtner between 1841-43. It is an almost literal copy of the Loggia dei Lanzi in Florence, which was built in the 14th century.

The **Siegestor** (Triumphal arch) stands at the northern end of the Ludwigstrasse (Ludwig's street) in Munich. Friedrich von Gärtner began to build it in 1844. This arch was modelled on the Ancient Arch of Constantine in Rome. It was built to commemorate the Bavarian troops who fought in the Wars of Liberation in 1813-15. The triumphal arches were the most characteristic architectural tasks of Neo-Classicism recalling the Ancient times; they were built in most European cities.

Greece had become independent in 1832, so palaces were needed for the new ruler. The revival of architecture, classical architecture in particular, was to start late. Indeed, the movement was consolidated there only when it was already out of fashion in the rest of Europe. The style, paradoxical as it may seem, was foreign import. It arrived in 1833 with the new monarch, Otto von Wittelsbach of Bavaria, likewise an import.

The King of Greece was the son of Ludwig I of Bavaria, who paid much of the cost of his son's palace. Leo von Klenze was sent to Greece to straighten things out with Otto's father, Ludwig I. He proposed a vast palace in the Kerameikos district. His design was a characteristic example of Neo-Classicism, but it was never executed. In the same year Karl Friedrich Schinkel proposed a royal palace on the Acropolis itself. It was a marvellous, picturesque cluster of classical forms, mingled with the ancient temples. But Schinkel did not visit Greece and could not press his claims.

The new town plan and the **royal palace** were finally undertaken in 1836 to the designs of the less ambitious and more practical man, Friedrich von Gärtner. These German architects established Neo-Classicism in Greece. Neo-Classicism was adopted here as the official style.

Neo-Classicism and Romanticism in Russia

After the Baroque era, the Neo-Classical age was ushered in under Catherine II (1729-96). During her 34 years on the throne (1762-96) she ensured that the Russian Empire made a contribution to European life, whether political, economic or cultural. Catherine was a worthy successor to Peter I (1672-1725), a monarch who had sought to bind his nation closer to Europe.

Indeed, Catherine II thought of herself as Peter's heiress. This fact is testified to by the inscription on Falconet's **equestrian statue for Peter the Great** made between 1768-82. This equestrian statue is built in St. Petersburg with rocky base and prancing horse. Peter the Great

may well be called the creator of a Russian nation, a new Westernized Russia, and so this statue is one of the first monuments to national genius of our era.

Peter I initiated a comprehensive restructuring of Russia. He abandoned old structures and broke with tradition. He made European journeys to study the European cultures and technology. The impressions gained on these travels led him to introduce fundamental reforms in administration, the economy and culture. The Tsar brought artists and architects from throughout Western Europe. He established a new capital city on the River Neva, **St. Petersburg** to provide Russia with access to the Baltic Sea and with a 'window onto Europe'.

From the time of its foundation in 1703, St. Petersburg was intended to be a port of entry for Western influence. Remarkable mixture of work was done here by Italian, French, British, German and Russian architects during the next century and a half.

In 1745, on the recommendation of Frederick the Great, the German princess of Anhalt-Zerbst married the heir to the Russian throne, Peter III (1728-62). Later, as Catherine II, she ascended to the throne and became a decidedly Russian and nationalist ruler. True to the spirit of the Enlightenment, Catherine was highly educated, and adopted the ideas of western European philosophers. She was guided by the basic principle of 'Russia is a European power' and was also a committed patron of the arts and sciences. Catherine II was well aware that a modern state required a new architectural language, and this opened the path for a change in style to Neo-Classicism. She reacted against the Rococo and adopted the neo-classical style.

In St. Petersburg, Alexei Kvassov architect drew up a general development plan that took account of the needs of this growing city. He retained three main axes of the city centre on the left bank of the Neva (the Admiralty side), and planned a regular network of streets, whose houses would have uniform frontages. The river banks were given granite walls and the canals spanned with stone bridges. Under Catherine II a wealth of new public building types were developed: educational institutions, judicial and administrative buildings, banks, hospitals, commercial buildings and warehouses.

The Academy of Arts promoted a lively exchange between Russian and Western European artists, Italian and French architects taught at this institution and a number of Russian scholarship holders from the Academy travelled abroad. In Rome and in Paris they extended their knowledge of Antiquity.

Between 1764-88 the Academy of Arts was housed in a new imposing building according to plans by **Jean-Baptiste Vallin de la Mothe** (1729-1800) **and Alexander Kokorinov**. De la Mothe was a Frenchman, one of the most important of the foreign architects. The building was one of the first neo-classical structures in the city and erected on the Vassilyevsky Island. It has a rectangular ground plan with a large, round inner courtyard surrounded by four smaller courtyards. Here the teaching and residential rooms were sited.

The main façade faced the Neva and showed a new neo-classical design. The plinth was in rusticated stonework with semicircular windows. On top of this base were two floors arranged in strict symmetrical fashion by three projections featuring porticoes and pilasters. The central section of the façade was given greater emphasis by its portico of Doric columns and loggia, though the concave and convex curves of the central projection still expressed the Baroque spirit.

In Russia Neo-Classicism appeared not only in St. Petersburg but also in **Moscow**. From the architectural aspect Moscow was a little more underdeveloped than St. Petersburg in the second half of the 18th century. As well as building her capital in St. Petersburg, Catherine the Great devoted her attention to the reconstruction of the old capital of Moscow, whose medieval appearance she disliked.

The transformation of Moscow into a city of great classical architecture happened during the late 18th and early 19th century. Though it was less striking than that of St. Petersburg, it shows the vitality and adaptability both of Russian architects and of the classical style. The extent and quality of the work are still little appreciated.

Catherine II wanted to have the centre of the city of Moscow, the Kremlin, rebuilt completely. She wanted to symbolize the new enlightened Russia with a new **Kremlin Palace**. In 1767 Catherine commissioned **Vasily Bazhenov** to plan the scheme. Vasily Ivanovich

Bazhenov (1737-99) was educated in St. Petersburg, Paris and Rome and he was a pupil of the French architect, de Wailly. Bazhenov worked for five years on a grandiose design that incorporated the urban environment around the Kremlin. The massive frontage of the Great Kremlin Palace was the dominant feature of the ensemble and faced the Moskva river. Bazhenov arranged the Senate and the administrative buildings around forum-like squares, connected by streets. But just two years after the foundation stone, which was laid in 1773, work was halted for political and economic reasons.

In order to regulate the process of town planning, a commission for urban development was established in Moscow. Important public and private buildings, especially in the area close to the Kremlin, were erected.

The city palace of the Pashkov family was designed and built by Bazhenov between 1784-86. The highly ornamental **Pashkov Palace** (now library) is built on sloping ground opposite the Kremlin. It is one of the highlights of neo-classical architecture in Moscow but maintains links with the Baroque.

The three-storied central section is connected to side wings by galleries of a single floor. A portico of four Corinthian columns with statues screens the two upper floors of the main building, which is surmounted by a balustrade with vases and crowned with a belvedere. (Belvedere means 'beautiful view' in Italian, and in architecture it means a lookout tower or terrace on the top of palaces or castles. In garden architecture belvedere means a garden pavilion or building with beautiful panorama.) The two-storied façades of the side wings feature Ionic gabled porticoes.

The work of Bazhenov's assistant, **Matvey Feodorovich Kazakov** (1738-1812) gave the new Moscow its neo-classical character, more than that of any other architect. He had travelled in France and in Italy, and was an admirer of Palladio, as can be seen in both his public buildings and his private palaces. He was also interested in reviving ancient Russian forms and mingling them with Gothic details as he did with bizarre effect in one of his palaces, in Petrovsky Palace (1775-82). Kazakov's Moscow churches of the 1780s and 1790s are asymmetrical in composition.

Kazakov's mighty triangular **Senate Building in the Kremlin** (now the Council of the Ministers) was built in Moscow between 1776-87. The ground plan was a triangle, which enclosed a domed rotunda. The great Doric rotunda is flanked internally with impressive freestanding Corinthian columns. Adjoining rooms were connected by corridors and gave on to a large inner courtyard defined by diagonal wings. This spatial arrangement represented a new type of administrative building.

A number of Moscow buildings at the turn of the 19th century are associated with Quarenghi, who had a lasting influence also on the neo-classical appearance of St. Petersburg. **Giacomo Quarenghi** (1744-1817) travelled to Russia from Italy in the years of 1779 and 80. Palladio's architectural theory had fascinated Quarenghi. He introduced a monumental Palladianism at the **English Palace** in the English Park **at Peterhof** near to St. Petersburg (1781-89). His building is geometrical construction, and the exterior display a monumental unity with sparing use of ornamentation.

One of Quarenghi's commissions was Russia's first bank, the **State Bank in St. Petersburg** (1783-88). Its central building recalls a Palladian villa, but the other wings surround it in the shape of a horseshoe.

The most remarkable foreign importation was probably the mysterious Scottish architect **Charles Cameron** (c. 1743-1812). He was in Rome in the 1760s, published the *'Description of the Baths of the Romans'* in 1772. On the basis of this work, Catherine appointed him her chief architect in St. Petersburg. Cameron was working for Catherine II in 1779 in **Tsarskoe Selo**, at the summer residence, about fifteen miles from St. Petersburg. For the addition to Tsarskoe Selo Cameron produced a series of apartments in Adam's style between 1779-84 and added the **Cameron Gallery and Agate Pavilion** to Rastrelli's Rococo palace in 1783-86.

Cameron's other principal work was the **palace in Pavlovsk**, at the suburban royal residence. It was built for Grand Duke Paul, for the future Tsar, Paul I between 1781-85. The grandiose ensemble of palace and landscape park – with its pavilions, cascades, artificial ruins, avenues and river – harmoniously combined the principles of neo-classical architecture with an

English-style Romantic park. The design for the park was the first example of an English landscape garden in Russia.

Again, influence from Adam is apparent, particularly in the magnificent Grecian Hall, inspired by Adam's great hall in Kedleston, Derbyshire. The walls are decorated in stucco, and antique statues decorate the niches of the lower floor. The rotunda in the centre of the palace is an echo of the saloon in Kedleston. In the park Cameron erected varied garden pavilions. The circular Temple of Friendship from 1780 was the first building of the Greek Doric style in Russia. Another pavilion, was built there between 1797-99, as another structure devoted to antique themes. It is a simple but spectacular portico with clear antique details.

The end of the 18th century witnessed turbulent changes that affected not just St. Petersburg but all of Russia. The 'Golden Age' of Catherine the Great was over. Paul (1754-1801) succeeded his mother, but his reign lasted just four years. During the reign of the new ruler, Alexander I (1777-1825) appeared changes in Russian Neo-Classicism. All the leading architects were united in their belief that the architectural appearance of a city should be uniform. During the reign of Alexander the population of St. Petersburg increased to 440.000, and the area encompassed by the city grew accordingly. Entire districts sprang up from nothing.

One of the most famous churches of St. Petersburg in this era is the **Cathedral of the Virgin of Kazan** along the Nevski Prospekt, along this great avenue. The building was named after the icon of the Virgin of Kazan and was built between 1801-11 by **Andrei Voronikhin**.

Voronikhin (1759-1814) a Russian architect was born as a serf on the estates of Count Stroganov, who sent him to study architecture in St. Petersburg, later financing his studies in France and in Italy. From 1800 he taught at the Academy of Arts in St. Petersburg, and won a competition for the design of the Cathedral of the Virgin of Kazan.

Voronikhin was able to integrate the cathedral into an urban ensemble, placing it in the context of surrounding streets and squares. In accordance with the wishes of the Tsar Paul I, the building was provided with a colonnade in imitation of St. Peter's in Rome. The cathedral itself has a Latin cross-shaped (cruciform) ground-plan and five aisles.

Difficulties arose during the construction of the cathedral, however. According to the Russian Orthodox canon, the altar of a church should face east. Voronikhin therefore shifted the northern aisle, placing it next to the Nevski Prospekt. In front of it he built a broad, arched colonnade of 96 fluted Corinthian columns in four rows, which form a great square and conceal the actual church itself. Thus the side façade takes on the function of the building's main frontage. The effect was completed in the vertical plane by the monumental 72-meter-high dome over the crossing. Passageways to the surrounding streets are provided at both ends of the arched colonnade by massive portals.

A second colonnade (on the southern side) as well as a square on the western side were never completed. Balanced proportions as well as rich sculptural decoration contribute to the cathedral's harmonious impression. After the war of 1812 the building became a memorial.

At the same time as Voronikhin's major work was underway, the design of the **Bourse** (Exchange) by **Thomas de Thomon** (1754-1813) for the area of the city opposite the Winter Palace entered a long period of planning. Thomon was a Swiss, who had studied in Rome and had been a pupil of Claude-Nicolas Ledoux in Paris. He was soon appointed court architect by Alexander I.

The Bourse in St. Petersburg was Thomas de Thomon's main work. The first design for the city's Bourse was prepared under Catherine II in the 18th century. Between 1806-10 Thomon replaced the wooden structure with a stone one, which was clearly indebted to the architecture of Greek Antiquity. This design corresponded perfectly to the taste of the Tsar, who preferred a Hellenistic style.

The prominent position of the Bourse means that it forms one of the high points in the urban fabric of St. Petersburg, while functioning as a counterweight to the state functions of the palaces on the opposite bank. Vassilevski Island is the largest of the 42 islands in the Neva, and its arrow-shaped head forms the point at which the Neva divides in two before both arms flow into the Gulf of Finland.

The base on which de Thomon's exchange stands is faced with colossal blocks of granite. This tall granite plinth is on the model of a peripteral antique temple. The colonnade is of slender Tuscan columns carrying not arches but a straight entablature. Thomon used short stumpy Tuscan columns instead of the Greek Doric. The absence of fluting made it even more primeval-looking. The columns represent power. The body of the building rises above the entablature and has in the front a lunette window. The great hall inside is barrel-vaulted.

The Bourse shows French effects and combines elements taken from Boullée and from the antique temples at Paestum, which de Thomon had visited. This monumental templar building was part of the major redevelopment of the imperial capital carried out by Alexander I (reigned 1801-25) and his brother Nicholas I (reigned 1825-55). They were in rivalry with Catherine the Great to make St. Petersburg a city with the most splendid public buildings. The Exchange is typical of the Neo-Classical style, which symbolize the importance of this commercial building. (Two enormous columns ornamented with ship's prows flank the Bourse.)

The Exchange was followed by perhaps the largest neo-classical building in the world, the **Admiralty**. The entire complex is of quite extraordinary dimensions: the main wing is 407 meters long, and the two side wings are each 163 meters in length. It was built between 1806-23 by **Andreyan (Adrian) Dimitrievich Zakharov** (1761-1811) on the opposite bank of the Neva. Zakharov was a Russian-born architect, who had been trained under Chalgrin in Paris in 1782-86.

The function of the building was unusual in the context of St. Petersburg town planning: the tower with its golden 'needle' serves as an orientation point and terminus for the three main roads of the metropolis. The U-shaped complex was separated by a canal from two sets of inner buildings. The outer buildings were occupied by the Admiralty administration, the inner ones by the shipyards.

Both the architecture and rich sculptural decorations form a unity. The design of the façade was intended to glorify Russia as a sea power. The main entrance of the central Admiralty tower is in the shape of a triumphal arch and the side wings are emphasized by a huge gabled portico. The lateral façades of this brilliant and varied building provide reflections of Zakharov's stay in Paris.

The Admiralty formed the architectural focus of St. Petersburg and ultimately led to the design of two squares, which border it and act as accents for the city centre.

The **squares in the centre of St. Petersburg**, next to the Admiralty are spectacular and grandiose architectural ensembles in uniform neo-classical style. The three main axes, which start from the Admiralty, from the centre of the city, were formed earlier under Catherine the Great. Two squares were shaped on both sides of the Admiralty. One of them is the **tsarist forum** with the Baroque Winter Palace and the curved General Staff buildings. The other square is the so-called **civil forum** with the Senate and Synod buildings and with the St. Isaac's Cathedral.

After the deaths of Zakharov, Thomon and Voronikhin and the victory over Napoleon of 1812, a new era in the architectural history of St. Petersburg began, in which Carlo Rossi came to prominence as the last great late neo-classical architect. **Karl Ivanovich Rossi** (1775-1849) moved away from the neo-Greek toward a style more Italianate and more festive. He was Italian-born but Russian-trained. He came to Russia in 1787, remaining there until his death. In 1806 he was appointed court architect. In Moscow he played a crucial role in reconstructing the old metropolis after the fire of 1812. After 1816 Rossi became the principal architect and town planner in St. Petersburg.

Rossi designed vast urban architectural ensembles in the manner of Voronikhin and Zakharov. His oeuvre represents the pinnacle of St. Petersburg's urban planning. Like no other architect, Rossi knew how to integrate a building's design with its urban environment. Rossi's achievements, based on a comprehensive planning concept, signalled the perfection of Russian Neo-Classicism.

In 1817 Rossi realized his first design for the plan of an entire city district in the centre of St. Petersburg. The south side of the Palace Square was to be redesigned between 1819-29. The Winter Palace was built earlier in the style of Rococo (1754-62) by the Italian Count Bartolommeo Francesco Rastrelli (1700-71). The two unified **General Staff buildings** stand

opposite the Winter Palace in a sweeping elliptical curve, which is 600 meters long. They are connected with each other by a double triumphal arch, which leads on to the Nevski prospect.

The arch facing the square is crowned by an attic, which bears a statue of Victory in a chariot drawn by six horses. The rest of the sculptural ornamentation glorifies the victory over Napoleon. Rossi's grand and rich style can be appreciated in the General Staff Arch and flanking office buildings, which were built in front of the Winter Palace.

Rossi also followed a similar concept in his construction of the Senate Square (today the Decembrists' Square), which serves as a civil forum. On the street side opposite the Admiralty he built the symmetrically arranged **Senate and the Synod** buildings, which are united by a majestic arch. The Senate was the highest government department but the Synod the highest ecclesiastical authority.

The **St. Isaac's Cathedral** on the civil forum of St. Petersburg was built between 1817-57 by the French architect, **August Ricard de Montferrand** (1786-1858). He was a pupil of Percier. It is a not very coherent design based on Soufflot's Ste.-Geneviéve in Paris. The ground-plan is central but simpler; it is not a Greek-cross but only a rectangle. The exterior of its important iron-framed dome was inspired by Christopher Wren's dome of St. Paul's Cathedral in London. The dome's iron structure published in 1845 is one of the earliest examples of the trussed shells of cast iron.

Starting from the Nevski Prospect, the theatre complex includes **a square, the buildings along Rossi Street and the Alexandrinski Theatre**. The ensemble was designed by Rossi and built between 1828-34. The focus of this urban ensemble is the large theatre itself, which opened in 1832. The façade is decorated by a loggia of Corinthian columns. The loggia is crowned by an attic with the quadriga of Apollo. The main façade is in stark contrast to the strict Doric colonnades of the symmetrically planned buildings of the theatre. These buildings are uniform in appearance and they form a small street, which leads to the theatre, today Rossi Street. This street is famous because of its proportions; its width is the same as the height of the buildings along the street.

During the 1830s German influence penetrated where French and Italian had for so long held sway. In 1838, following the fire at the old Winter Palace in St. Petersburg in 1837, Leo von Klenze was called from Munich by Tsar Nikolas I to design the new Hermitage Museum. Klenze's vast building stands on the banks of the Neva next to the Hermitage Theatre of Quarenghi. It is an impressive amalgam of French, Russian and German Neo-Classicism.

Neo-Classicism and Romanticism in the United States of America

The styles in the United States

In the second half of the 18th and in the 19th century the architecture in the United States has dual characteristics. On the one hand it depended on the results of the European architecture and followed it. But on the other hand the American architecture modified the European one to its own image. Because of its special conditions – it was a colony until 1780s and after 1783 became an independent country – the terminology of the styles and eras in America is entirely different from the European. As in all colonies, North American architecture showed the influence of the various origins of the country's settlers. As was the case in Central as well as South America buildings were adapted to local geographic, climatic and infrastructural conditions.

The first period in the American architecture was the so-called **Colonial style** until the end of the 17th century. The new settlers brought along the architecture of the European continent. In the search for their own identity far from the centres of power, the colonies were less burdened by history than their colonizers.

The next important era was the **Georgian** between 1690-1790. After the recognition of the independence of the United States (after the Paris Peace in 1783) a new style came to existence, the **Federal** or after the president the **Jeffersonian style**. Then the architecture was

to demonstrate the pride and self-confidence of a young, democratic society. The Federal style existed between 1790 and 1830, but the Georgian style lingered on in some territories.

The European Antique Greek style was reborn between 1798-60 in the United States. This era, the **Greek Revival** lasted longer than in Europe. A knowledge of Greek Antiquity was rediscovered including its political thought, literature and architecture.

At the time of the Greek Revival America can no longer be left out of the picture of Western European architecture. American building had been colonial to the end of the 18th century, colonial as the latest Gothic, Renaissance and Baroque buildings of the Spanish and the Portuguese in North, Central and South America. The Greek Revival in the United States is also still closely dependent on European, especially English, examples. But national qualities, such as a remarkable stress on engineering technique, sanitary installation and equipment in general, now come to the fore. The ideological background of the strict neo-Greek is the liberal humanism of the educated classes in the early 19th century. This spirit created their first public museums and art galleries and their first national theatres.

– end of the 17th century	**Colonial style**	
1690-1790	**Georgian style**	
1790-1830	**Federal (or Jeffersonian) style**	Neo-Classicism
1798-1860	**Greek Revival**	
1830-1870	**Gothic Revival (or Victorian or the Queen Victoria style)**	Romanticism
1840-1890	**Italianate (or Italian Villa) style (Neo-Renaissance)**	Historicism
1855-1885	**Second Empire style**	
1870-1900	**Richardsonian Romanesque**	
1870-1900	**Queen Anne style**	
1880-1900	**American Shingle style**	
1890-1940	**Colonial Revival**	
1890-1920	**Bungalow Arts and Crafts**	Turn-of-the-century style
1895-1930	**American Foursquare style**	Modern

The **Gothic Revival** followed between 1830-70. /This style was otherwise the Victorian or the Queen Victoria style because the style was used mostly under the reign of the long-lived Queen Victoria (1837-1901)./ The Revival of the Renaissance style, the Neo-Renaissance was called here as **Italianate** or Italian Villa and existed between 1840-1890. The French effect appeared between 1855-85 as the so-called **Second Empire style** referring to Napoleon III.

A special style was used in the United States, the **Richardsonian Romanesque**, which refers to the activity of the architect Henry Hobson Richardson between 1870-1900. The **Queen Anne style** was different from this but existed at the same time. The **American Shingle style** was used between 1880-1900.

At the turn of the 20th century the so-called **Colonial Revival** (1890-1940) represented the historicizing tendencies but the so-called **Bungalow Arts and Crafts** (1890-1920) corresponded to the European Turn-of-the-century styles. The Modern architecture was called here as **American Foursquare style** and existed between 1895 and 1930.

Thomas Jefferson (1743-1826) was an outstanding personality in the history and in the architecture of the United States. He was a simple farmer and then studied law, and later he became a writer, architect, politician and statesman. Jefferson took part in the writing of the Declaration of Independence in 1776. And he was the third president of the young United States twice between 1801-1809.

In his early architectural period he followed the so-called Georgian style, as the English architecture of the second half of the 18th century had great effect on his architecture. He became the key figure in the turn to Neo-Classicism, at the same time pioneering an independent North American architecture. He had studied the works of the English Neo-Palladians early in his career. In 1768 he designed and built a **villa** modelled on Palladio's centrally planned structures for his country estate in **Monticello**, Virginia. In a language of

classical forms, Jefferson created an elegant building, which became the cradle of the Federal style.

After some residential buildings in Virginia he designed the **Virginia State Capitol in Richmond** in 1785, the first capitol building in the United States. The building as a capitol has symbolical meaning, that is why here Jefferson used more neo-classical elements than on his residential buildings. Jefferson knew the Maison Carrée in Nimes in France, this splendid Antique Roman temple, and took from it the general scheme of deep portico and pilasters along the sides. In front of the building it has a two-storey high, Ionic hexastyle portico, so it looks like an Antique temple. This is an early example of the early Neo-Classicism or the so-called Federal style.

Jefferson's main work is the **University of Virginia in Charlottesville**, in Virginia, which was built between 1817-26. The idea of a university as an 'academical village' consisting of small, linked buildings surrounded by grass and trees had been conceived by Jefferson as early as 1804. It was not until 1817 that the final plans were drawn up and the foundation stone laid.

Jefferson's monumental plan showed an ideal university campus. It is one of the earliest examples of a 'campus university', in which buildings are loosely grouped in a pavilion system and integrated into the surrounding landscape. The ten Palladian pavilions arranged in regular order in two rows were linked by colonnades and were facing each other across a great lawn. Jefferson wanted all the ten pavilions to be different so that 'the buildings could serve as a model for professors of architecture'. Each of the pavilions, containing lecture rooms and living accommodations for ten professors, was differently designed than the others. The whole ensemble is bound by spacious green areas.

On Benjamin Latrobe's recommendation, Jefferson placed at the head of the whole composition a great rotunda containing a suite of three oval rooms and a superb circular library and the country's first observatory.

The circular **library** was linked with the pavilions by colonnades. It was executed between 1823-27 in the form of the Antique Pantheon in Rome. But it was a copy of the Pantheon, Jefferson enlarged its scale but retained its proportions as usually in the European Neo-Classicism. Jefferson's circular and domed library has two storeys and before it a two-storey high Corinthian portico.

Benjamin Henry Latrobe (1764-1820) was another interesting architect next to Jefferson in late eighteenth century America. He was born in England but his father came from France. He studied in Europe, in Germany and in England. At first Latrobe worked for Samuel Pepys Cockerell (1754-1827) in London, who was an outstanding neo-classicist architect. Latrobe immigrated to the United States in 1796 and soon began to work as an architect in Virginia. His **Bank of Pennsylvania in Philadelphia**, which was built between 1798-1800, was the first Neo-Greek building in the United States and had an enormous effect there since the Greek Revival entered America by it. His deliberate return to the art of Greek Antiquity was combined with notions of archaeological authenticity and purity of style.

Latrobe's austere templar building is a rectangle with two Greek Ionic hexastyle porticoes at each end and a low brick dome with lantern. Its ground plan is simple and is composed of a long rectangle, which culminated in a central, circular domed rotunda in the middle and at the back the Stockholders' Room with two apses. The top-lit dome recalled Soane's Stock Office of 1792 in the Bank of England in London. The demolition of Latrobe's building in the 1860s was a major loss for America.

Latrobe used Doric columns already in 1800, but the Doric gained wide American acceptance only after 1820. In the 1820s the Greek Revival was triumphant in public buildings, as well as in simple houses built of wood in the vernacular style.

In 1803 Latrobe became Surveyor of the Public Buildings of the United States a post that called for completing the **Capitol Building and the White House in Washington**. Before long Latrobe contributed to the designing of the Capitol mainly in the planning of its structure and of its inner spaces.

In 1790 the site of the new federal city was selected and the new Federal capital was called Washington in honour of the first President of the United States. Plans were drawn up by

the French major, Pierre Charles L'Enfant (1754-1825). The traditional chessboard plan was modified by allowing for differing widths of blocks and boulevards.

To build a State Capitol and also a **President's House** (the White House) was decided in 1792. On Jefferson's suggestion, competitions were held. The Irish **James Hoban** (1762-1831) won the competition for the president's house with an old-fashioned design copied from James Gibbs' *'Book of Architecture'* (edited in 1728). The office of the President of the United States was therefore built in a very traditional, even old-fashioned manner, and in the style of the country's former colonial masters. Its main motif is a central semicircular portico, which has two storey high, slender columns. The White House owes its characteristic portico to Latrobe.

The competition for the **United States Capitol** was inconclusive. In the end **William Thornton** (1759-1828), doctor of medicine of the University of Edinburgh, an amateur architect, won the competition with his plan. George Washington praised its 'grandeur, simplicity and convenience'. Because Thornton was not skilled in the planning of structures, the French **Stephen Hallet** (1755-1825) and the Irish **James Hoban** (1762-1831) and later **Benjamin Latrobe** architects were requested to contribute in the work. Hallet modified Thornton's plan, which was a broad, domed building featuring a giant portico and a low dome. The façade motifs show French inspiration. No wonder, as not only was Hallet French but Thornton also knew Paris well. The Capitol was built parallel with the White House.

In 1803 Latrobe took over. He made some internal alterations and designed a new façade with a low Greek Doric portico and a rather unorganic upper loggia of much slenderer columns. The dome remained of the Pantheon type. His alternations lend the puritan building greater charm and elegance. **Charles Bulfinch** (1763-1844) and at the end Latrobe's pupil, **Robert Mills** (1781-1855) also appeared among the designers of the Capitol.

The Capitol, which is a masterpiece of the American Neo-Classicism, was finished only in the 1860s. But the Senate wing of the Capitol was occupied in 1800. The wide, huge building represents power. It stands on a hill and has a large cupola and a middle portico in its centre. In contrast with the Capitol the White House represents elegance.

The competition on the new cupola of the Capitol was won by **Thomas Ustick Walter** (1804-1887). Walter worked first in Latrobe's and then Strickland's office. He designed in Neo-Greek style as Latrobe or Strickland but he used also Neo-Roman. He became famous when he won this competition on the **cupola of the United States Capitol** in Washington.

In 1850 a substantial extension of the Capitol was recommended and a competition held in the same year. Walter's plan was chosen. The foundation stone was laid in the next year, the new side wings were added between 1851-65. The dome with its cast-iron frame was authorized in 1855 and completed in 1865. The enlarged cupola is 94 feet (30 meters) in diameter, rises to a height of 207 feet (63 meters) and has trussed shells of cast iron. Perhaps Walter knew Ricard de Montferrand's book about the St Isaac Cathedral in St. Petersburg (1817-57), which was published in 1845, with its plates of the iron structure of the dome. Cupolas with two drums out of which the lower is colonnaded were fashionable solutions in the architecture of Neo-Classicism; as built for example on the Panthéon in Paris (formerly church of Sainte Geneviéve, built by Jacques-Germain Soufflot between 1755-92).

As state architect Walter designed representative buildings. In this era the historical details became more and more accurate, but the public buildings became more schematic. All of the public buildings were designed always with portico and tympanum, cupola and order of columns, but the function and the structure began to become important.

William Strickland (1787-1854) was the greatest and most original representative of the neo-classical style, of the most correct Neo-Greek in the United States. His main work was the **Second Bank of the United States** (later Custom House) **in Philadelphia**, in Pennsylvania, built between 1818-24. For banks the severe Grecian had the preference in these years, the style probably intended to express security. Here Benjamin Latrobe's effect is visible, whose Bank of Pennsylvania was the first Neo-Greek building in the United States. Actually, Strickland was one of Latrobe's pupils.

Strickland's design was modelled on the Parthenon in Athens but reduced by three fifths (3/5). This was the first American public building to be based on the Parthenon. The Second Bank of the United States has two mighty octastyle Doric porticoes, which shows that

Strickland knew well the details and proportions of the style. In the middle of the combined ground-plan is the representative barrel-vaulted banking hall with giant Ionic columns.

Neo-Classicism and Romanticism in Hungary

The architecture of early Neo-Classicism (the 1760s to 1800)

In consequence to the peripheral situation of Hungary certain styles did not appear at the same time as in Europe. After the Turkish domination the destroyed towns and villages were rebuilt in the 17th century. They rose rapidly from their ruins, and the new buildings were erected in the Baroque style. As late as in the middle of the 18th century Baroque flowered in Hungary while the architects of other European countries built their buildings already with neo-classicist or romantic taste.

The first shot in the architectural war against Baroque frivolity in the lands of the Habsburgs was fired by the French architect, Isidore Canevale (1730-86) in the Hungarian town of **Vác**. There he erected a **triumphal arch** and a cathedral. The arch was commissioned to mark a visit by the royal couple, Maria Theresa and her husband, Franz Stefan in 1764. The radical nature of its form was impressive, as was the fact that it was not simply built from temporary material as a festival arch. As one of the first permanent triumphal arches, it heralded the arrival of this type of structure in the 18th century. In Vác its purpose was not only to welcome the royal couple, but also more importantly, to mark the beginning of an urban revival after a long period of Turkish rule.

The most conspicuous feature of Canevale's triumphal arch is its complete lack of columns and pilasters. Any kind of decorative elements was avoided. These architectural elements are replaced by a flat wall surface, while the attic is separated from the lower section by a cornice and a curious frieze, showing eagles bearing garlands. Only the portrait medallions and the inscription situated between them on the attic provide the viewer with information on the origin of the arch.

The early Neo-Classicism appeared in architecture only in 1770s in Hungary. In **Vác** a new **cathedral** was built between 1767 and 77 by Isidore Canevale. He was the favourite architect of Joseph II, and they broke radically with the styles of Baroque tradition. Canevale had to incorporate the foundations of his predecessor, Franz Anton Pilgram, into the building. In the interior, too, he continued the Baroque tradition, but the exterior is ahead of its time. In Canevale's design for the façade of the cathedral in Vác the architectural elements are set against a flat windowless wall. Another prominent feature of the church is the way the dome with its distinctive lantern rises from the roof of the nave without the aid of a drum.

With its strictly geometrical shape, flat walls, simple architectural details and straight entablatures the Cathedral of Vác preceded its era. It could be ranked among examples following the French early neo-classical architecture. The cathedral with its revolutionary design served as a model for other Hungarian monumental neo-classical churches, such as the cathedrals in Esztergom, Eger and Szombathely.

One masterpiece of public buildings of this period is the former **Lyceum** or archiepiscopal secondary school **in Eger**. The square shaped college was built according to the plans of the Viennese architect Joseph Gerl, but after his death it was continued by Jakab Fellner between 1762 and 85.

A large square-shaped inner courtyard is surrounded by the side wings of the building, creating a beautiful enclosed architectural area. An observatory tower rises from the middle of the eastern façade instead of a projecting rizalit standing in the middle of the other three façades. Gerl proportioned the façades with rizalits in the middle and on the edges as it was usual in the Baroque period. But the smooth walls, the moderate mouldings are characteristic of the Classicizing Late Baroque style.

The architecture of Neo-Classicism in Hungary (1800-1850)

Neo-Classicism was a remarkable period in Hungarian architecture. In this period the ideas of the Enlightenment had domination in all European countries. The new civil societies

took their own ideas from the ancient times, and that's why the art of Antiquity got in the centre of interest. Hungarian Neo-Classicism developed later than in other western countries, but in the using of classical elements and motifs it was more certain, because of the many examples built in Europe in this style.

From the other aspect Neo-Classicism was used as a style of the Hungarian national movements. In this era Hungary was a province of the Austrian Habsburg Empire, and there were some movements for independence. Neo-Classicism was considered as the negation of the imperial Baroque style. In Hungary Romanticism by using medieval or individual elements was not a parallel style with Neo-Classicism as in other countries. Romanticism spread here later, only in the 1850s, and had a much smaller influence than Neo-Classicism.

Common features of the neo-classical period can be seen most clearly in the more modest dimensions of buildings, and the design of clearly tectonic structures with a tendency to plain, open walls.

The ideals of Neo-Classicism were not exclusively used by the Catholic Church to show its reverence for Rome, since the main Calvinist place of worship in Debrecen also employed a portico with columns and twin towers on its façade. A characteristic example of Neo-Classicism is the **Calvinist Great Church in Debrecen**, which was built between 1805 and 1819 by Mihály Péchy (1755-1819). He used the walls of the medieval St. Andrew's Church, which burned in 1802. This determined the structure of the present building.

The main façade stands on the lengthwise walls of the old church, leaving the internal space behind it much broader than deeper. This radical new solution was used in the building of later Calvinist churches. The ground-plan of the church has still Baroque character, but the façade consists only of classical elements.

The twin-towered façade with its ten large Ionic engaged pillars supporting a large tympanum and an attic is wide and calm. In his plan Péchy designed a big dome on the church, but finally it was built without it due to a shortage of money. As the body of the church consists only of a transverse nave adjoined by a flat choir, the twin towers of the façade seem strangely outsized. This effect is heightened still further by the uncompleted dome over the 'crossing'.

Before 1873 the today's Hungarian capital Budapest consisted of three individual settlements: Pest, Buda and Óbuda. In the 18th century Buda became the military and administrative centre of Hungary. In the first decades of the 19th century the architecture of Buda stuck on its level, but on the contrary Pest city's development accelerated. During the so-called Age of Reform, between 1825 and 48 institutes and public buildings were established all around the country.

In the first decade of the 19th century **János Hild** (1766-1811) was the main architect in Pest. He designed the first **urban organisation plan of Pest** in 1805, on which Pest was built in the following 50 years. Street network was organized in this plan, then also new squares were laid out, the height of façades was arranged that made Pest so uniform in the period of Neo-Classicism.

Mihály Pollack (1773-1855) was the leading architect of the first four decades of the 19th century. His neo-classicist buildings were built elegantly, with a refined taste and with good proportions.

One of his first works was the **Lutheran Church** standing **on Deák Square** in Pest. It was built between 1799 and 1809. It was used as a military warehouse for two years, and consecrated only in 1811. The small bell tower above the façade was demolished in 1875. Inside there is a tiered gallery from 1820. Today's main façade was built by József Hild in 1846. He added a new portico to the church changing Pollack's architecture.

Mihály Pollack designed the **Festetics castle in Dég** in 1815, whose simple and severe scheme was followed in the 19th century castle architecture. The most lavish part of the long building is the main front. The two storeys are bounded by the middle portico, which has six Doric columns. This colonnade has the symmetry of the castle reinforced, but the side rizalits are not stressed. The castle has two porticoes, one on the main and one on the rear façade.

The scheme of Dég castle was followed and further developed by the **Castle in Alcsút**. It was designed in 1819 by Pollack for nádor József, for the palatine of Hungary. The

proportions are more noble and balanced. The façade has only one portico in the middle with four Ionic columns. This castle was demolished in the Second World War, only its main façade stands in its garden.

These castles or manor-houses in Hungary were surrounded by landscape gardens as in Western Europe in the same period. The simple, geometrical forms of the buildings are in contrast with the designed but naturally looking gardens.

Pollack built palaces too, as one in Szép Street in Pest. The **Almássy Palace**, was designed in 1817. The simple solution for the façade was followed by many palaces or tenements in Neo-Classicism. The ground floor has nine semicircular openings, but the first floor windows are rectilinear with simple frames.

The ground plan is organized around an inner courtyard as are the palaces in the cities in this period. From the street a splendid doorway leads toward a representative semicircular staircase and into the rectangular courtyard, which is articulated by a spectacular niche, from which the horse stables open up. The second, simpler staircase between the stables and the coach houses is built for servants.

Pollack designed also his **own house in Nádor Street** in Pest in 1822. The building also followed in two storeys the wide-spread neo-classicist solution: the simple cubic shape, on the ground floor semicircular openings, and on the two upper storeys rectilinear windows, which have stressed ledges. The ground-plan of Pollack's own house is simple and similar to the preceding building. Around the inner courtyard Pollack designed vaulted rooms and arched staircases.

In the 1830s Pollack designed some large-scale public buildings. The first of them was the **County Hall in Szekszárd**, which was built between 1828 and 36. On its simple but noble façade Pollack used six severe Doric columns by the middle portico, to express the authority of the County Hall. A representative entrance hall with three aisles leads from the portico into the octagonal inner courtyard, around which the offices are organized. On the second floor above this entrance hall is the assembly hall. This building was an example for the other rural public buildings of this style.

Pollack's work was also the **old Vigadó**, the Municipal Concert Hall of Pest standing on the river-side of Danube. The ground-floor with its semicircular arcade serves as the basis of the two storey high columns. The first floor is emphasized by big semicircular windows. The middle portico with its Ionic columns is the main motif of Pollack's architecture. The ground-plan has asymmetrical form because of the site, but the façades were symmetrical as always in Neo-Classicism. The building was an important example of its era, but was demolished in 1849. In its place the new Vigadó was designed and built by Frigyes Feszl in 1859.

The **Ludoviceum**, the building of the Military Academy was built by Pollack between 1829-36 in Pest in Üllői Street. Its four-storey high, huge mass had flat façades with an emphasized middle rizalit and unstressed side rizalits. They are articulated by Corinthian pilasters. (The Museum of Natural History is now in this building.)

Mihály Pollack's main work was the **Hungarian National Museum**. The idea of building a museum had arisen at the end of the 18th century. In 1802 Count Ferenc Széchényi offered his collections and library to the projected institution. János Hild designed a plan in 1807 on another site in Pest that was given by Count Antal Grassalkovich. The City of Pest obtained the present site, and a new designing work could begin.

Middle class development and cultural advance had begun in Hungary toward the end of the 18th century. A huge impetus came from the so-called Reform Diets or Reform parliamentary sessions of the early 19th century, which aroused national consciousness and caused great stress to be laid on Hungarian works of arts.

Pollack was commissioned in 1836 to prepare the designs for the Museum. Construction began in the following year and was largely completed within ten years. The only changes made to the designs (mainly for economical reasons) were to omit the statues, which would have given a much richer impression. This was a drawback for the Museum's appearance.

The most lavish part of the oblong building is the main front. It has seven axes on each side flanking a portico with eight Corinthian columns. This colonnade gives the building dignity

and has its symmetry reinforced. Leading up to the colonnade is a flight of steps across its complete width. This raises the ground floor to a level that leaves room for offices and stores beneath. The high ground floor becomes almost one with the main floor. The fluted columns link several storeys. Above the colonnade there is a triangular pediment, adorned with a group of allegorical statues. Like the capitals of the columns, the sculpture is a zinc casting. This was cheaper than stone carving, and weighed less. The side and back elevation are similarly treated, except they have piers protruding from the walls, instead of a colonnade. The whole building has calm and even rhythm.

The plan of the building, with two inner courtyards surrounded by wings, is reminiscent of the popular engravings published in the early years of the 19th century by the French architect Jean-Nicolas-Louis Durand. This arrangement helped to provide mixed, overhead and side illumination for the exhibition areas. This building can be compared with Schinkel's Altes Museum in Berlin, which served as the model during this period.

The doorway behind the colonnade leads into the entrance hall that opens into a round room. Along this main axis Pollack placed the most ornate rooms. The solemn main staircase in the middle axis divides before reaching the first floor. The main staircase leads up to a round hall, to a Rotunda, inspired by the Pantheon in Rome. This leads into the solemn upper hall, which lies behind the colonnade on the main front. The doors at the sides of the Pantheon Hall lead to the rows of exhibition rooms. From the entrance hall to the upper ceremonial hall the way was carefully planned through a series of solemn spaces. The National Museum with its nobility is an outstanding piece of Hungarian Neo-Classicism.

The other most important architect in Neo-Classicism was **József Hild** (1789-1867), János Hild's son. He built several mansions, houses in Pest. All the palaces of the Kirakodó Square or Market Square in Pest (nowadays Széchenyi, earlier Roosevelt Square) were built by Hild. Neo-Classicism and the organisation of the façades in the city resulted in such uniform streets and squares. The wide-spread neo-classicist solution was here used: on the ground floor semicircular openings, on the two upper storeys rectilinear windows, and in the middle of the façade columned portico or a simple rizalit with pilasters. This splendid neo-classicist ensemble was a remarkable work in its era, but all these buildings were gradually dissembled in the 20th century.

The first bridge over the Danube in Hungary, the Chain Bridge (Lánchíd) was built on this square. It was designed by a Scottish engineer William Tierney Clark and finished by his namesake Adam Clark in the middle of the 19th century, between 1840 and 49. On the southern side of the Kirakodó Square stood the **Lloyd Palace**, built by József Hild between 1827 and 30. It served as the House for Merchants.

Hild had also such important commissions as three cathedrals, he built the cathedrals in Eger, in Esztergom and in Pest. The Archiepiscopal **Cathedral in Eger** was built by Hild between 1831 and 39, on the site of the medieval Church of St. Michael. The nave has three domes with the central one standing on a drum with windows. The aisles have barrel vaults. The solemn eastern façade is defined by a monumental stairway and a portico. It is crowned by a tympanum and an attic above six Corinthian columns. The side façade is composed of symmetrical geometrical blocks clearly indicating the internal space behind it. The two towers are built against the western sanctuary. In Hungary the cathedral in Vác was followed by a whole series of new church buildings on neo-classical lines, such as this cathedral and the cathedral in Esztergom.

This church in Esztergom represents the pinnacle of neo-classical cathedrals in Hungary. It had been one of the most important churches in the country ever since its archbishops were granted the right to crown Hungary's kings in 1111. Destroyed during the sieges of the Turks, this diocese was not occupied again until 1820, when Franz I transferred the primate's seat from Nagyszombat to Esztergom. Plans to build a new church to replace the one heavily damaged during the Turkish wars were pursued from 1760s. Then Isidore Canevale was charged with surveying the town's castle hill. The planning process begun only in the 1820s, but the new Archiepiscopal **Cathedral in Esztergom** was started to be built in 1822. Pál Kühnel (1765-1824) and afterwards János Packh (1796-1839) developed a complex of buildings on the site of the medieval Cathedral of St. Adalbert, which was reduced to a ruin in

the Turkish wars. Kühnel's grandiose design of a complex linked the cathedral with chapter houses, bishop's palace and seminary.

János Packh reduced the scale of Kühnel's design after 1824, and József Hild completed the cathedral, after yet another revision of the plans. Hild continued to build it from 1839 but changed the plans. From Kühnel's grandiose plan only the Cathedral and some houses of canons were realized. The Cathedral was consecrated in 1856 as then the world's eleventh largest church. Its ground-plan unified central and longitudinal spaces in a unity. The size of the single aisle is emphasized by the dome mounted at its centre on a huge drum. Situated high above the Danube, the rear façade is dominated by the monumental Corinthian columns of the drum. The dome reaches to over 70 meters in height and is supported by 24 columns. The cupola was designed by Hild with iron structure that was a novelty in Hungarian architecture. The frontispiece, with its 57-meter-high projecting corner towers and lavish sculptural ornamentation, rests on ten Corinthian columns. The two side towers make the main façade wider, helping to improve its proportions. Although it was built by three architects the Esztergom Cathedral is a harmonious and homogenous work.

Hild's last important plan for a church was the **St. Stephen's Parish Church** (known as the Basilica) in Pest. It would have been the main work of his life, but his death in 1867 hindered him from it. In 1845 he received the commission for the building. He designed more versions, but all in neo-classical style, with central space and shape. In his first version the dome is supported on a drum, and the four towers on the corners extended the proportions of the building. Already in this plan he designed the church with a semicircular sanctuary. Hild deviated from the symmetrical quadratic form, which was preferred in Neo-Classicism, because the street behind the sanctuary ran slantwise.

In 1851 József Hild began to build the church, but after his death it was continued by Miklós Ybl, who made a new plan in Neo-Renaissance style.

There were some other architects in Neo-Classicism by Mihály Pollack and József Hild, but their importance was smaller. The **County Hall in Pest** was built by **Mátyás Zitterbarth the Younger** (1803-67) in Városház Street between 1838 and 41. Because of the narrow street Zitterbarth could not design a projecting centre portico, but the function of the building required a stressed and elegant façade. He pulled back the wall behind the Corinthian columns, that is why the portico could be effective.

Another work of Mátyás Zitterbarth the Younger was the Hungarian Theatre, later the **National Theatre**. It was built between 1835 and 37, but was dissembled in the beginning of the 20th century. Its simple cubic shape is articulated by pilasters.

Romanticism in Hungary from 1850 to 1870

Romanticism was not a parallel style with Neo-Classicism as in other European countries. Romanticism spread here later, following Neo-Classicism, only in the 1850s and lasted only until the 1870s. This was a very sad period in Hungarian History. After the Revolution and War of Independence in 1848-49, the development came to a halt.

The number of buildings erected in this style is a lot fewer than in Neo-Classicism. The architects used medieval (Romanesque or Gothic) or individual elements instead of classical. It is said that in contradiction to the uniformity of the neo-classicist buildings, Romanticism resulted in more individual and different designs.

Miklós Ybl (1814-91), who was the most important architect in Eclecticism, designed Romantic buildings in his early period. His first remarkable Romantic building is the **Parish Church in Fót**, built between 1845 and 55. He used on his elegant, vertical façade medieval forms mingled with Eastern, Arabic and Moorish ornamental elements.

Ybl planned also lots of palaces, apartment houses in the rapidly developing Pest. The **Unger House in Pest** was built in 1852. Similarly to the Church of Fót Ybl used here semicircular openings, entablature, other architectural elements and ornamentation from the Romanesque period.

The Romantic style is mostly represented by the **Vigadó** in Pest, the Municipal Concert Hall of **Frigyes Feszl** (1821-84). It was built between 1859 and 64. Feszl was a pupil of

Friedrich Gärtner in Munich, thus the Rundbogenstil (meaning ‘Round-arch style’) had an effect on Feszl. The Vigadó was erected in this style in the place of Pollack’s neo-classical Vigadó, which was destroyed in 1849. On the façade two stressed side rizalits flank the vast semicircular arches in the middle. The richness of the sculptural decoration and reliefs shows the novelty of the Romantic style after the flatness of Neo-Classical façades. By using Eastern (Byzantine, Islam) geometrical ornamental elements Feszl searched new ways in architecture. He also experimented with the development of a national style but he had no followers in his era, only at the turn of the century.

Eclecticism or Historicism in the European countries

The period from 1750 to 1910 is a difficult period from the point of view of the styles. What is common in this era that the architects used the architectural details and motifs of the earlier historical styles.

When the struggle between Classicists and Gothicists began to subside, other styles took their place. In the 1830s and 1840s new Neo-styles appeared in the architecture, Neo-Renaissance and after that Neo-Baroque. From the appearance of Neo-Renaissance the next period, Eclecticism started. When the art-historical judgement of the period changed another periodization was used in the mid-twentieth century. In this periodization Historicism corresponds to Eclecticism. According to a newest periodization all of the 19th-century styles belong to Historicism. Actually our whole period revived and used again the historical styles thus this was the century of Historicism.

In the years from 1830 to 1840 the eccentric taste of clients and picturesque and historical associations remained determinative, but the new scale of architecture and the number of buildings erected show that a new phase was also starting. The architectural knowledge of the architects sharpened and on the whole their imitations grew in sensitivity as the century progressed. Architectural scholarship concentrated on historical research. Architects were able to draw from a well-assorted stock of historical details.

Eclecticism or Historicism in Great Britain

From about the 1830s the approach to the classical tradition underwent a renewal. In England attitudes toward a monotonous Neo-Classicism began to cool, this renewal took the form of a return to the national classical tradition.

Shortly the grand style of the Italian High Renaissance palazzi replaced the simplicity of the Neo-Greek. Arthur Gilman wrote in 1844, that the introduction of Grecian architecture had been a great mistake. He proposed to return to the style of Bramante, Palladio and Michelangelo. In England the diffusion of the modern 'Italian' or Neo-Renaissance style had its impact on the very specific design of clubs. The first truly Neo-Renaissance palaces in England were **Sir Charles Barry**'s Travellers' and **Reform Club**s in London.

The London Reform Club was built by Barry from 1837 to 1841. On the left from the Reform Club the Travellers' Club stands, which was built between 1829 and 32. They look like 'Italian' palazzi. The ground-plan of the Reform Club also follows 'Italian' samples, with a court in its centre, but this is not a court, but a salon rounded with colonnades on the upper and the under floors.

Architects returned to the style of Bramante, Palladio and Michelangelo. What helped to popularize the Renaissance style, must have been its high relief against the flatness of Neo-classical. Also it represented a more substantial prosperity, and this was the ideal of the leading classes during the Victorian age.

It was not long before banks, insurance companies and office blocks also adopted this style, as did apartment blocks and large private town houses. Such types of buildings sprang up in increasing numbers during this decade in the style of Eclecticism.

Historicism in Germany

In the second half of the 18th century Germany had political as well as economic division. There were more than 20 small states in the area of today's Germany. Saxony with its capital Dresden played a significant economic as well as cultural role beside Prussia and Bavaria.

The Kingdom of Saxony has favourable economic conditions because of its commercial activities with Eastern Europe. This prosperity resulted in spectacular building activities in the capital Dresden. In 1830s Gottfried Semper designed a representative addition to the **Zwingerforum**, to the centre of **Dresden** with spectacular public buildings.

Gottfried Semper (1803-79) was the most important German architect and theorist of his time. He studied mathematics and law at Göttingen University, attending courses on classical archaeology at the same time. He then turned to architecture, becoming a pupil of Friedrich Gärtner in Munich. In the 1820s he worked in Paris, and then he travelled to Italy and Greece. In 1834 he took up a teaching post at the Dresden Academy. In 1849 he was forced to flee after having taken part in an abortive revolution. He went to Belgium and France then to England. Here and later in Zurich he wrote and published his important books. In 1871 he went to Vienna, where he became Baurat (Building Councillor) to the emperor and built there some important public buildings.

Semper was not only a successful architect, but as a theorist he was more searching, certainly more wide-ranging in his scope, than anyone else of the period. In the first period of his activity he worked mostly in Dresden and used Neo-Renaissance details and motifs to form his buildings. Two of his masterpieces in Dresden were the first Opera House (1837-41) and the Gemäldegalerie (Art Gallery) of the Zwinger (1847-54).

The Zwinger, Matthäus Daniel Pöppelmann's splendid Baroque building was built in the 18th century. Semper planned different public buildings to connect the Zwinger with the river Elbe and to form an impressive, representative square. Semper imagined a forum according to the Ancient Roman models, but his style was different. There he planned a museum and a theatre framing an elongated square and closing it by colonnades. Unfortunately this grandiose plan was not executed but was only begun and built more economically.

Finally the museum was planned in a different place. It was turned by 90 degrees and the Baroque building of Zwinger was closed with it.

Semper's **Gemäldegalerie** (Art Gallery) closed the Zwinger from the north and its Italianate gravity is against of Pöppelmann's Baroque. This building was built in Cinquecento style, in Neo-Renaissance between 1847-54, but the first plans were drawn in 1838. The Italian Renaissance style seemed to contemporaries to be best suited to an art gallery. The façade facing the Elbe is emphasized by middle and corner rizalits. The openings on the second floor are semicircular but alternately only every second one has a pediment.

As at the Leo von Klenze's Alte Pinakothek in Munich the pictures are displayed on the upper floor. Generally speaking Semper's gallery is in plan less functionally consistent than the Pinakothek, where all large halls are equal in stress. Semper has instead in the middle a 'Salon Carré' (a rectangular salon) with a dome, externally rather played down.

Semper's first important work was the **first Opera House** in Dresden built between 1837-41. It brought more innovations in theatre planning. The conception was determined by the site. A longer main façade was needed facing the planned forum but the function of a theatre demanded longitudinal ground plan axis. Semper absolved this contradiction. The main axis of the building was perpendicular to the planned colonnade so the side entrances became emphasized. Thus the length of the main façade can be longer and can form a round wall of the square.

The semicircular façade of the first Opera House displays a sober Italianate composition. The style is Cinquecento (Neo-Renaissance). Its inner form is shown on the exterior; Gilly's or Schinkel's lasting influence can be seen. The Neo-Renaissance structure vaults towards Theaterplatz (Theatre Square), repeating externally the structure of the auditorium inside. The theatre is also notable for the inclusion of a large foyer, beginning a development that would culminate in Garnier's Grand Opera House in Paris.

When a fire destroyed the **Dresden Opera House** in 1869 it was rebuilt again by Gottfried Semper. His son Manfred Semper executed it between 1871-78. In his later period Gottfried Semper changed his style and approached the Neo-Baroque. His buildings became more plastic, the masses had bigger projections.

The change of style from the Renaissance to the Baroque is striking. Effective contrast exists between the two opera houses, which was designed thirty years apart by the same architect. Here the sculptural effects and the syntactical articulation are clearly accentuated. The rusticated basement, the paired columns in the avant-corps and the statues as crowning features make the building most effective. Semper had already reached the Baroque concept of the second Opera House a decade earlier, in a design of 1858 for an Imperial Theatre for Rio de Janeiro.

The **Reichstag**, the German Houses of Parliament is the most important example of German Historicism. It was built between 1884 and 94 by Paul Wallot in a grand well-managed Neo-Baroque style. The modernity of the large glazed metal dome in the centre is in contradiction with the Baroque rhetoric but both served for the representation.

Historicism in France

Already before 1830, France rediscovered her native Early Renaissance. The associational value of these buildings was of course national, but their aesthetic appeal lay in a still livelier play of ornament on surfaces.

In the 1840s and 1850s the forms became more and more undisciplined until a Neo-Baroque was reached. The **Opera-house in Paris** of 1861-74 is the master work of **Jean Louis Charles Garnier** (1825-1898). It is one of the earliest and best examples of the Neo-Baroque. Garnier could achieve a splendidly unified character in most of the essentials of architecture – in mass, rhythm, texture, and outline.

On the main façade the side projections are stressed and emphasized by segmental pediments. The façade is proportioned by paired columns on its second floor. On the first floor there is an opened arcade with semicircular openings. The details of this richly ornamented façade originate from different periods. The façade is decorated by reliefs and sculptures as well. Externally as well as internally the stylistic elements derive from the Italian Cinquecento and from the France of Louis XIII and Louis XIV, from Renaissance and from Baroque. Polychromy is widely used to heighten the impact yet further. The façade is massive and heavily decorated and gilded, and really monumental.

Garnier's plan is complex and well-managed. The entrance and the grand staircase owe something to Bordeaux Theatre. The great stair hall is perhaps Garnier's greatest triumph. There is a tension in every form. The flights of the stairs fly easily and with perfect fluency through the stair hall. With its related corridors and foyers the stair provides the best of all possible ceremonial approaches to the auditorium. The main foyer and the auditorium are yet more splendid. The auditorium is for over 2000 people. The shape is the traditional horseshoe and there are four tiers of boxes. The lobbies and corridors were made larger than even before. Although the structural frame is iron that is nowhere allowed showing.

Historicism in Belgium

Joseph Poelaert's enormous **Palais de Justice** (Law Courts) in **Brussels** was began in 1866 and completed in 1883. Instead of a description of this eclectic grand-scaled building, the poet, Paul Verlaine's impressions may be quoted: 'There is something of the Tower of Babel, plus Michelangelo, with a bit of Piranesi, and a dash – one may say – of madness… Outside is a colossus, inside a monster. It wants to be immense, and it is.'

Historicism in Austria

In the second half of the 19th century **Vienna** developed quickly and dynamically. The medieval town wall around the city hindered this expansion and development, and was no longer necessary for defence. Around the town wall there were about 300 meter wide unbuilt

areas, the so-called glacis, which gave new possibilities for development. An imperial direction ordered the demolition of the medieval town walls. In 1857 the demolition was finished, and in its place a new vast boulevard came into existence, the **Ringstrasse** with new representative public buildings, palaces and parks. Although it has no real centres or cross axes, two spectacular squares were established here: the so-called civil and imperial forums. According to the eclectic style the new buildings look very different, they followed different historical styles. The residential buildings framing the Ring had mostly Neo-Renaissance palace façades.

The first representative public building of the Ringstrasse was the **Votivkirche** (Votive church), which was built by Heinrich von Ferstel between 1856 and 79 in fourteenth-century Gothic style. Its over-perfect stylistic unity is its sole modernity.

Beside the Votivkirche (Votive church) a spectacular rectangular square, the so-called **civil forum** came into existence.

The beginning of the eclectic period was when the architects turned to the Renaissance style, instead of the classical or the medieval forms. The Neo-Renaissance style was followed by Neo-Baroque, then the architects began to select from all of the previous historical styles again. In this period the architects could express themselves in different styles. For different tasks they used different styles, and sometimes they also mixed different elements. The façade became only a dress; the architects could change it without changing the ground plan.

The 'non plus ultra' of these contrasting effects is to be found on the Ring in Vienna, where, within a regular and well-balanced plan, a neo-classical Parliament building stands side by side with a neo-Gothic Town Hall, a University in the style of French Renaissance, and a theatre designed in Italianate Renaissance. These buildings were built in the same time, in the 1870s and 1880s on the so-called civil forum where they form a remarkable eclectic ensemble.

Beside the Votivkirche (Votive church) but on the Civil forum stands the **University**, which was built also by Heinrich von Ferstel between 1871-84. Here he did not use Gothic but French Renaissance to form the façades. In the ground plan Ferstel planned more inner courts to provide the corridors with more light.

Gottfried Semper (1803-79) was a leading German master in the eclectic period. In the first period of his activity Semper worked mostly in Dresden and used Neo-Renaissance details and motifs to form his buildings. In his later period Semper changed his style and approached the Neo-Baroque. In Vienna he worked with this taste. Here he designed the Burgtheater and also the Hofburg (Chancellery) (1871-1913). And he designed two museums in Vienna, which form a pair. He worked here together with Karl von Hasenauer, but their collaboration ended in violent quarrels and violent hatred.

In the plan of the **Burgtheater** (1880-86) Semper further developed his thoughts about the theatres. The main façade is also arched as the Dresden Opera House but here the side entrances are more emphasized than in Dresden. They have longer mass so Semper could elongate the shorter façade of the theatre to close the square with this wall. So this building has less united mass than the Dresden theatre. Although the details derived from the Italian Renaissance the effect of the building is Baroque.

The **Rathaus** (the Town Hall) was built by Friedrich von Schmidt between 1872-83. An effort has been made to achieve a 'modern' synthesis between the grand classical tradition and the Gothic style. It is easy to discern the tripartite composition: base, arcaded storey in the centre and attic. In spite of the fact that this is a large symmetrical Gothic scheme with a high middle tower, it looks like a scenery.

The **Houses of Parliament** was begun in 1874 on the designs of the Danish architect, Theophil (Eduard) von Hansen. It was completed only in 1883. The style, which was chosen for the building, is unmistakably Grecian. The main façade is facing the Ringstrasse and not the square. This façade is 530 feet long and symmetrical. It has middle and side projections, which quoted Ancient Greek temples, but the system is Baroque. Between these characteristic parts the façades have Renaissance aedicules. The Chambers of Deputies are semicircular. The most monumental room is the so-called Peristyle, an oblong hall surrounded by giant Corinthian columns. In spite of the difference in the style of the elevations, the layout resembles that of the Houses of Parliament in London.

Beside the Civil forum also an **Imperial forum** came into existence. According to the plan two semicircular imperial governmental buildings and two museums should have been built. But one of these buildings with semicircular masses was not finished.

The **Hofburg** (Chancellery) was built by Gottfried Semper and Karl von Hasenauer between 1871-1913. They also worked together here as in the Burgtheater. The semicylinder of the building quoted Ancient Roman forums, but the mass and the details are Neo-Baroque, the so-called imperial Baroque.

Semper's and Hasenauer's Vienna museums are the **Kunsthistorisches Hofmuseum** (Museum of Fine Arts) (1872-81) and the Naturhistorisches Museum (Museum of Natural Science) (1872-89). Semper's museum designs were made from 1869 onward. Semper and Hasenauer comprised the whole Imperial Forum with the similarly looking museums left and right of a vast square, and the Hofburg on the third side. The style was free Baroque developing out of Semper's former Renaissance. The mixed motives derived from different styles and different centuries.

The mass of this museum with its side and middle projections and octagonal cupola is a Neo-Baroque composition but most of the details derived from the Renaissance. The openings have different shapes and frames. The first two and the second two floors are connected as there were only two storeys. The main articulation is given by the classical, Doric and Ionic orders of columns with their corresponding entablatures and attic. The connection between the two lower storeys is strengthened by the surface covered by square stones. On the third floor there is the so-called Palladian-motif or Palladian window or Serliana.

The **Opera House** was built in the 1860s by Eduard van der Nüll and August von Siccardsburg in Italian Renaissance style. It is similar to the Budapest Opera House but beside its calm mass the details are not well-balanced.

Eclecticism or Historicism in Hungary (1860-1900)

Since around the 1860s, the style of Neo-Renaissance had replaced Romanticism. It was not long before all types of buildings adopted this style. Later in Eclecticism other styles were used, but the eclectic architectural culture also favoured the intermingling of styles.

In 1860 an exclusive competition was held to design a building for the **Hungarian Academy of Sciences**. Some famous architects were invited as Heinrich Ferstel from Vienna, or Miklós Ybl. Most of the competitors planned in the Neo-Gothic style, but Miklós Ybl in the Neo-Renaissance one. Because the committee could not decide, two German architects, Leo von Klenze from Munich and August Stüler from Berlin were requested to design new plans in 1861. The old Klenze designed a neo-classical building, but **Friedrich August Stüler** (1800-65) planned a Neo-Renaissance palace housing the Hungarian Academy of Sciences. Stüler's plan was accepted and now his building is standing on the north side of the Széchenyi (earlier Roosevelt) Square by the Chain Bridge in Pest. It was built between 1862 and 64. Using the Venetian Renaissance style was a novelty in Hungary; this was the first building in this style and shortly was followed by others.

After the Compromise of 1867 new monumental public buildings were erected in Hungary according to the new demands and possibilities.

Miklós Ybl (1814-91) was the most important architect in the period of Eclecticism, although he designed his first buildings in the Romantic style. His preferred style was Neo-Renaissance; his most famous buildings were built in this style.

One of his famous buildings was originally a **customs-house**, but has been the University of Economics only since 1951. It was built between 1870 and 74 according to the plans of Ybl. He used the Renaissance motifs precisely on the façades and in the spectacular interiors. The most stressed element is the middle balcony supported by ten pillars and extended along the second floor.

The so-called **Várkert-bazár** (the Castle Garden Bazaar) was built in Buda in 1871. Ybl's task was to design an elegant construction surrounding the Royal Palace. He planned a façade consisting of a row of arcades in the middle of which there is a ceremonial ascent beginning with a flight of stairs and then winding upwards. The Neo-Renaissance architecture

is used playfully but the result was a long elegant façade with good proportions. Now the building is ruinous and stands without function.

Miklós Ybl's masterpiece was the Neo-Renaissance **Opera House** in Pest built between 1875 and 84. There were a number of representative theatres built in Europe in that time. The Pest Opera House follows the Viennese Opera House built earlier, but also the Paris Opera House. Ybl used the French Renaissance here, to design the most spectacular building of his era. The complex shape is bound by the arched roof, hiding the big stage-loft over the stage. The shape of the ground-plan was determined by the site. The entrance halls, the staircases, the auditorium, the stage and the rest of the rooms are bounded in a mass. The interiors are as elegant as the exteriors. The elegant centre staircase with its five arms follows the staircase in the Bordeaux Theatre.

József Hild began to build the **St. Stephen's Parish Church** (popularly known as the Basilica) in 1851. His plan was designed in neo-classical style, but after his death from 1867 the building was continued by Miklós Ybl, who made a new plan in Neo-Renaissance style. After Ybl's death in 1891 the Basilica was completed by József Kauser. It was finally dedicated in 1905. This was the largest church in Hungary, but it was intended at first to be the parish church of Lipótváros in Pest. The façades were already finished when Ybl died. The Neo-Renaissance church has two frontal towers, and a dome. The upper part of the double dome is supported on a drum articulated by large windows. The inner dome is placed under the drum. The stressed motif of the main façade is the big arch of the middle portico.

The Hungarian capital, Budapest before 1873 consisted of three individual settlements: Pest, Buda and Óbuda. In 1873 the three towns were unified as Budapest and set upon a speedy process of development. The **Boulevard-Avenue structure of Budapest** and the majority of the city's urban-planning were constructed in the brief three decades leading up until the turn of the century. The curve of the 'Little Boulevard' marks the boundary of the Inner City, it follows the former city wall that bordered the medieval Pest and was demolished in the 1850s. Until the end of the century two Boulevards, the Little and the Great and a representative Avenue, the so-called Sugárút was formed here.

From the 1870s Neo-Renaissance palaces, monumental public buildings were erected on the major thoroughfares, but crowded tenements were built in the side streets. Architectural projects predominantly consisted of tenements and retail developments, although banks and insurance headquarters, hotels, justice buildings and churches were also constructed in great numbers.

The **Nagykörút (Great Boulevard)** extends a semicircle through the most densely-populated section of Pest, nowadays from the Margaret Bridge to the Petőfi Bridge. It has been a pulsating artery in the life of the city ever since it came into existence in the second half of the 19th century. The rapid development of the Pest city demanded room, and for this reason new apartment houses were built as part of a plan for uniform city development. It was finished by 1896 for the Millennium of the Conquest of Hungary, which was celebrated with great ceremony.

The ratio between the height of the eclectic buildings lining the Great Boulevard and the width of the thoroughfare is of human proportion. The boulevards and avenues were completed by 1900, it was at this time that the last section of the Great Boulevard was completed.

The **Sugárút** (the **Radial Avenue**, nowadays Andrássy Street) came into existence as part of a carefully integrated plan between 1872 and 77. The idea to connect the city by a wide and elegant avenue with the Városliget (the City Park), with the big landscape park, arouse in the 1870s. A competition was opened for construction of the avenue and a special statute set aside the necessary funds for appropriations and building operations. The small winding streets were pulled down, old houses were demolished, and construction was completed at a rapid pace.

The Radial Avenue consists of three big sections. The first section nearest to the city is surrounded by eclectic palaces built next to each other. The two last sections begin at the Oktogon, on this octagonal square, widened on three streets. The two narrower side-streets served not only as side-streets for the surrounding palaces but for riding into the City Park. On the middle section of the Avenue palaces and public buildings were built one against the other

as they were on the first section, but from the Kodály körönd (the Kodály Circus) the building up became thinner, here free-standing luxurious villas were built.

From the point of view of urban architecture, a carefully planned and harmonious ensemble came into existence. The row of living quarters surrounding this Radial Avenue mainly displays elements of the eclectic or the Neo-Renaissance style. The grandiose Radial Avenue with its good proportions is one of the most beautiful thoroughfares of Europe.

The Radial Avenue (nowadays Andrássy Street) runs into the **Hősök Square** (the Heroes' Square). This square with its buildings is the culmination of Andrássy Avenue. Both museums and the Millennial Monument all were built by Albert Schickedanz (1846-1915).

The Millennial Monument was erected to commemorate the Millennium of the Conquest of Hungary. Construction on the monument was begun in 1897, but it was finished only in 1902. The central point of the monument is a high column, which is crowned by a winged figure. Behind the column are two semicircular rows of columns with statues of outstanding figures in the history of Hungary.

There are museum buildings standing on both sides of the square. The **Museum of fine Arts** was built by Albert Schickedanz and Fülöp Herzog (1860-1925) between 1900 and 1905. They divided the main façade of the enormous building into three wings, which look small classical temples with their Corinthian colonnades and tympanums. With this breaking down of the huge mass the museum appears as if it were a building complex. The three wings as porticoes proportioned the wide façade on a human scale.

Opposite to the Museum of fine Arts stands the **Art Gallery**, which was also built by Albert Schickedanz and Fülöp Herzog in 1895. It is reminiscent of a Hellenistic temple, with its Corinthian portico, but the coloured majolica decorations represented Renaissance ornamentation.

The **Western Railway Station** had been being built from 1874 to 1877 on the place of the first Pest railway station opened in 1846. The new railway terminus was built on the basis of drafts of the French Auguste de Serres. The construction of the hall with ironwork was executed by the firm Eiffel and Co. The French engineer Alexandre Gustave Eiffel designed also the Eiffel Tower in Paris in 1889.

The glazed front of the hall follows the line of the Great Boulevard. The hall-roofing with its 42 metre span of iron frame is a very interesting constructional solution. The 25 metre high, impressive arrival hall had six tracks for the departures and arrivals of trains. The side buildings, the two high, domed corner-towers were built according to the taste of Eclecticism. Undoubtedly the Western Railway Station was the first example of a monumental station in which the gable of the passenger hall is boldly exposed in the façade without a rose window or arcades.

The **City Centre Market** on the Vámház Boulevard was built between 1894 and 1897 by Samu Pecz (1854-1922). This was the first market, but shortly some of this type of building was built in Budapest. Pecz designed a three-aisled building, with a semicircular arched iron framework. The external walls, made of bricks, have ornamental and architectural details recalling also medieval motifs.

The **Calvinist Church on Szilágyi Dezső Square** in Buda was also built by Samu Pecz in 1896. The neo-Gothic building has an individual pentagonal ground plan.

In the second half of the century the **Royal Palace of Buda** was enlarged. The Baroque building partly standing on medieval grounds was damaged by fire in 1849. Besides renovating it on the whole, the building was enlarged during the 1850s. The Neo-Baroque style of the palace is the result of the wide scale construction work directed by Miklós Ybl and after his death by Alajos Hauszmann (1847-1926). Between 1880 and 91 Miklós Ybl built a new wing on the western side of the palace, nowadays it is Wing F, the home of the National Széchényi Library. During the enlarging process Ybl followed the existing Baroque style of the palace.

Ybl completed the old palace with the new western wing, but from 1891 Hauszmann started to enlarge the eastern wing, and built a new dome over the new centre of the building complex. The Neo-Baroque architecture followed the existing details of the old Baroque palace

but expressed the claim for the representation of the building. The palace was burned down during the Second World War, and then it was rebuilt with more simple façades and dome and with modern interiors.

One of the outstanding monuments of Budapest is the **Church of Our Lady**, popularly known as the Matthias Church. It was built in the 13th-14th centuries, but its present appearance was achieved between 1895 and 1903, when Frigyes Schulek (1841-1919) completely reconstructed the church. He had the 18th century Baroque sections removed, and remodelled the exterior, largely by reproducing the original Gothic sections unearthed during demolitions. With this purifying from other styles Schulek worked by purist principles that were characteristic of this period.

On the east from the Matthias Church Schulek built the Neo-Romanesque **Halászbástya** (the Fishermen's Bastion) to give a pictorial background to the church. It was built between 1900 and 1903 over a former bastion. Its towers and stairways are a mixture of Neo-Romanesque style. Here the spectacle was important for the architect as always in the eclectic period.

The eclectic building opposite the Parliament in Budapest was originally built to be used by the **Kúria (the Supreme Court)**, nowadays it is the Ethnographical Museum. It was built between 1893 and 96 by Alajos Hauszmann. The big mass of the building with its grandiose portico and surrounding towers is a remarkable palace of Eclecticism.

The complex of our **Technical University of Budapest**, formerly the József Nádor Technical University was built from 1899 onwards. Then the University was transferred from the Múzeum Boulevard to the Lágymányos area. The University itself is one of the oldest institutions for higher technical education. Its predecessor, the Institutum Geometricum was founded in 1782. In 1872 it was raised to the rank of a university. From 1899 the complex has continually grown along the banks of the Danube between the Szabadság and the Petőfi Bridges. Today the University is still expanding southwards. Initially the new buildings were designed by professors of the Technical University. The first the Chemical Sciences Building was constructed in 1903 by Győző Czigler on Szent Gellért Square.

The main building, which overlooks the quay, was designed by Alajos Hauszmann, and was built between 1906 and 1909. The main building, with its imposing appearance and floor-plan, is conservative and academic in character, despite its secessionist ornamentation.

The neo-Gothic library and the laboratories and workshop-halls in Bertalan Lajos Street, designed by Samu Pecz, display a new approach, which combines historical elements with a new industrial culture.

The attractive neo-Gothic **Parliament** was built by Imre Steindl (1839-1902) between 1884 and 1904. The Houses of Parliament in London must have played its part too in the choice of style. There are perceptible reminiscences of this building. Steindl as a Professor at the Technical University used Gothic elements in interiors and exteriors with certainty. The enormous building is broken down by rizalits and by different roofs.

The ground plan is functional, but the conception is Baroque. Steindl planned 10 courtyards and 29 stairways in it. The rotunda is located in the middle section of the Parliament. In the south and north of it there are two Parliament chambers, one is the former Upper House, and the other is the House of Representatives. Occupying a splendid site on the bank of the Danube, Imre Steindl's Parliament building shows authority in the organization of its masses while there is a playful appearance in the interplay of roofs, buttresses and pinnacles.

An interesting building complex, which consists of 21 different parts, is situated on an island in the middle of the City Park Lake. This was named the **Castle of Vajdahunyad** since its most characteristic sections are reproductions of the Transylvanian Castle of Vajdahunyad (today in Romania), the former castle of the Hunyadi family. The building was built at first in 1896 by Ignác Alpár (1858-1928) as the main building of the Millennial Exhibition, therefore called as the Historical Group of Buildings. Alpár planned Romanesque, Gothic, Renaissance and Baroque wings, which consisted of replicas, such masterpieces of Hungarian history of architecture as the Romanesque Church of Ják in Western Hungary or the Gothic chapel of Csütörtökhely or the Castle of Vajdahunyad from Transylvania.

Because the building was built on a temporary basis for the Millennial Exhibition of 1896, Alpár used only temporary materials and structures such as wood and gypsum. But it achieved such popularity that it was later rebuilt permanently of stone in 1902. Nowadays the Museum of Agriculture is located in it.

Historicism in the United States

In America the historicist tendencies, the eclectic architecture, or the revaluation and mingling of the styles appeared in another form than in Europe. The search for tradition was expressed by borrowing historical motifs from European architecture, while a revival of tradition occurred in Europe too. The rules of using historical styles became there less severe and fixed, and were there modified to the different circumstances. In spite of using historical styles American architecture has managed there to create a particular, independent style in this period, which is different from the European ones in this time.

The revival of tradition was central to new requirements produced by mass society. In an age which tended towards superlatives, expansion and power, an emphasis on social responsibility, on the connection between culture and morality, and a sceptical approach to history appeared.

Although **Henry Hobson Richardson** (1838-86) laid the basis for historicist architecture in the United States, he influenced a whole generation with his work, which had a uniquely American independent style. His buildings are not only the starting point for the brilliant achievements of modern American architecture, but also exercised considerable influence on European architecture.

Richardson's Historicism, his famous so-called 'Richardsonian Romanesque', his deliberate references to Spanish and French Romanesque, created a bridge between tradition and the new building problems. His work, which uses only traditional building materials, was one of the origins of Modern architecture. He designed a large number of buildings, including warehouses, churches, hospitals, universities, private houses, police stations, railway stations and bridges. But the building, which recurs mostly in his work, is the library. His most famous libraries are in Woburn, North Easton, Burlington, Malden and Quincy, near Boston.

Richardson was commissioned to design the **Crane Library in Quincy** in Massachusetts in 1880. The rooms inside this small building are arranged asymmetrically. The large portal is pushed over to the right, with a rounded projecting staircase tower next to it, both under one gable. The entrance portal is Syrian in style. The symmetry is broken not only by the windows on the two side of the portal, but by the two upper gable windows on the end wall. The massiveness of the whole is emphasized by the big roof and the use of Milford granite for the rest of the building.

Early iron and steel structures

Beside the question of styles, the 19th century was an important period because of the appearing of new structures and materials in the architecture. In this period a rapid development began in the field of structures. Greenhouses, covered markets and halls, exhibition pavilions, passages and utility buildings were built of iron and later steel.

Iron has been defined as a linear two-dimensional fragile-looking material, in contrast to the solid, three-dimensional sturdiness of masonry. Elegant linearity is iron's most rational form. These characteristics led away from the solid, block-like, closed type of building, towards an open, linear, articulated frame.

As for new materials, iron and after 1860 steel, made it possible to achieve spans wider, to build higher, and develop ground plans more flexible than ever before. Glass in conjunction with iron and steel, enabled the engineer to make whole roofs and whole walls transparent.

The most perfect examples of early iron architecture, the suspension bridges are the work of engineers, not of architects. **Severn-bridge** was the first cast-iron arched bridge built in the 18th century in 1777 over the river Severn in Coalbrookdale. Abraham Darby built it, but

Thomas Farnoll Pritchard and John Wilkinson were the architects. The form of the bridge follows structures of wooden shuttering supporting of arches, yet showing some ornamentation.

A suspension **bridge** was built of cast-iron by Thomas Telford between 1820 and 26 **over the Menai Straits**, in Wales. It has already 177 metres span.

The early culmination of the iron-architecture was perceptible in the constructions of large greenhouses. The gardeners and horticulturists used to the iron- and glass-work of conservatories. These giant greenhouses were made of cast-iron and glass. The elements could be fabricated industrially and rapidly erected on a light foundation.

This spectacular **Palm House** was constructed in **Kew Gardens** in Richmond by Decimus Burton and Richard Turner between 1845-48. It was built in the Royal Botanical Garden. The arched roof wants to cover only the plants; it does not resemble any historical building type, only the function determined the form. In his other buildings Burton was a Neo-Classicist architect but here he freed himself from the restrictions of the styles. Although Burton was an architect the designers of the conservatories were rather gardeners and horticulturists than architects.

The peak of the early English iron-architecture was Joseph Paxton's **Crystal Palace**, the pavilion of the Great Exhibition in London in 1851.

In January 1850 it was decided to organize an international exhibition in London in the next year. The Building Committee, comprising architects and engineers, launched an international competition on 13 March. In April 245 projects were received, but the Committee decided to form alone the final plan. Meanwhile Joseph Paxton, a new member of the committee, put his basic idea down on paper. Joseph Paxton had made a name for himself as a specialist in the construction of large greenhouses. He was a gardener and horticulturist used to the iron- and glass-work of conservatories.

He planned a giant greenhouse with a flat roof, made of cast-iron and glass. The simplicity of the architectural design shocked certain members of the committee. His project was accepted only because time was running out. It was the only one, which satisfies the essential condition of being capable of completion before the opening of the Exhibition planned for 1 May 1851. With some modifications the design was finally approved and adopted on 26 July. The detail drawings were produced in seven weeks. And on 26 September the first column was erected in Hyde Park. The building was completed, ready to receive the exhibits in January 1851. The exhibition opened on 1 May, and by 6 October, when it closed six million people had visited it.

The construction of the Crystal Palace was for Joseph Paxton the culmination of twenty years' experience in building greenhouses. This building was constructed of a reduced number of standard parts: cast-iron columns attached by a collar to horizontal lattice beams and covered by planes of glass. The rain water was guided towards the hollow columns providing a runoff. All the dimensions of the building were multiples or submultiples of a single module of 24 feet. The elements could be fabricated industrially and rapidly erected on a light foundation. The semicircular vault and the ceiling were glazed throughout. The modular system, the new scale, the fantastic dimensions, the simplicity of the design, the repetition of simple forms and the rapid erection had consequence for architecture.

The interior view of the palace shows that there was saved some trees in the park by including them in the interior. The palace thus really served as a greenhouse. From the technical point of view the Crystal Palace did not cause any revolutionary solution. Paxton simply scaled up enormously the structural design with which he had experimented for the greenhouse built in Chatsworth in 1845-50.

The Crystal Palace stayed in the Hyde Park before being taken down and transferred to Sydenham in the south of London. It was disassembled and the elements reused for a new construction on a more ambitious plan. From 1853 it was used as an exhibition hall for annual fairs and exhibitions. It was destroyed by fire in 1936.

Following the July Revolution of 1830 in France, new ideas emerged among the younger generation of French architects, ideas relating not just to choice of style, but also to a rational, function-oriented design and use of materials. One of the most important

representatives of this approach was **Henri Labrouste** (1801-75), a student of Lebas. The ground plan of his new **Bibliothéque Sainte-Geneviéve** (Sainte-Geneviéve library), built between 1844 and 50 in Paris, was developed from pragmatic considerations.

The building is very simple in arrangement. It is a long rectangle, entered on the ground floor, with stack rooms to the left, offices rare books on the right. A separate stair hall leads up to the reading room, which occupies the whole of the upper level.

The novel feature of Labrouste's building is the frankly exposed system of iron columns and decorative iron arches of the vast reading room all along the first floor. The large, two-aisle reading room, visible in the interior as a cast iron structure is noble and purified.

The exterior is even more noble and purified. The decoration of the façade in an Italian Renaissance style is subordinated to the effect of the cubic structural mass. Above the ground floor, the apertures of the large pillared arcading are partly filled with inscription panels, corresponding to the bookshelves inside. They also help to articulate otherwise blank wall surfaces and illuminate the function of the building. The façade would not make anybody expect such a revolutionary interior.

Labrouste developed his design principles further in the reading room of the **Bibliothéque Nationale** (National Library) in Paris. Three years after completion of the Bibliothéque Sainte-Geneviéve in 1853 he was appointed as architect at the Bibliothéque Nationale that was earlier the Bibliothéque du Roi. In 1859 he began work on the main reading room, filling part of the court for which Boullée had prepared his designs. This was Labrouste's second masterpiece.

The reading room of 1859-68 again has exposed iron columns. They carry nine domes of faience and glass. The impression is lighter and more elegant than that of the reading room of the Sainte-Geneviéve library. The centrally laid out ground plan consists of nine units. The 16 slender columns are not only the parts of the structure but also the means of the decoration of the room. The cast-iron columns supporting the vault in the main reading room have Corinthian capitals, but these supports are so thin that this is only a reference to the classical architecture.

The stack room beyond the main reading room of the Bibliothéque Nationale with its tiered galleries of cast iron (1862-67) shows new effects. Here the decoration was not necessary that is why Labrouste planned a pure iron structure without any ornaments. This, to twentieth-century eyes, was the greatest creation. Even his contemporaries admired it, and for much the same reasons. Labrouste aimed at a larger synthesis. He used his lifts, his heating and lighting systems and his cast iron columns not for utilitarian reasons alone, but in order to relate his building organically to a nineteenth-century industrialized society.

Eugéne-Emmanuel Viollet-le-Duc (1814-79) French architect and theorist became the leading representative of a structuralist view of Gothic. He learned something of that rationalist doctrine of the Gothic. He was to turn his attention instead to the most rigorous analysis of every form, every detail of Gothic, to arrive at a set of principles for design that he hoped might be applicable to the 19th century. The architecture of the 19th century was to be analogous to that of the 13th century. It was to be the visible expression in contemporary terms, using contemporary materials such as iron, of a system evolved in the 13th century.

He thought that Gothic structural principles might begin to be interpreted. He believed that every feature, every moulding of a Gothic building could be interpreted as a functional device, whether as part of a supporting system or throwing off rainwater. He was convinced that architecture was a clear expression of function, a function that embodied political and social aspirations, material limitations and needs.

In one of his books Viollet-le-Duc showed very simply how iron, and timber, too, might be substituted for the stone structural members of a Gothic church, suggesting in this way how iron might be used in the 19th century. Viollet-le-Duc showed in some plates that he could produce a visual embodiment of his theories. He designed **fantastic projects** to show how to use the cast-iron structures in 'modern' Gothic rooms, in large covered spaces. He designed one of his **projects for a giant concert hall** for three thousand people with cast-iron struts and with a ceiling vaulted in iron and brick. He combined here struts and frameworks of iron supporting masonry vault.

Parallel to the development of iron construction, which tended to produce arched and domed spaces, there was another school, concerned exclusively with the rectangular relationship between support and beam.

In the United States cast-iron façades composed of pre-fabricated elements were a great success from 1848 onwards and did not fall out of favour until the 1870s. In 1848, **James Bogardus** supported the external walls of his **New York cast-iron factory** with pre-fabricated cast iron columns and beams, and filled the space between them with huge windows. The use of pre-fabricated parts made it possible to erect buildings very quickly. It is true that Bogardus invoked the Venetian Renaissance in his façades, yet they were similar to the façades of the 'skeletal' buildings, which were to come later.

An interesting use of the steel skeleton can be noticed on the **Statue of Liberty** in New York. This large statue was given to the United States by the French Republic in honour of the centenary of independence. The actual dates are 1871-86. The structural skeleton was constructed by the French Gustave Eiffel, the great bridge and hall constructor, the bronze statue by Auguste Bartholdi, the base by Richard Morris Hunt. The statue is 157 feet (52 metres) high and has inside an iron framework. As a national monument it has a symbolical meaning.

One of the most important buildings when the framework has also aesthetical role is the **Eiffel Tower in Paris**. It was the first wonder of the world in the industrial epoch. This is the first real example of the frame building technique, which makes no distinction between interior and exterior.

Gustave Eiffel planned the designs for this tower as a monumental entrance archway to the World Exhibition in Paris in 1889 in commemoration of the centenary of the French Revolution. The designs were prepared in 1884-6; the erection began in 1887. It is 300 metres (990 feet) high and looks like a triumphal arch at the entrance. The tower was believed at the time to be impossible to build. Eiffel with his experience of building bridges in several European countries proved that his design could be executed, although a contemporary mathematician calculated that it would collapse once it reached a height of 250 metres (750 feet). The individual parts of the tower are all produced in the factory (including 15,000 iron pieces). The bare structure of this historicist tower was decorated in its details by iron ornaments according to the trends of its era.

Public opinion was not nearly as enthusiastic about the building as its constructor, and there was a violent controversy about the destruction of the Paris skyline. Several artists protested against the tower, including the architect, Garnier, the composer Gounod, and the writers Maupassant and Verlaine. Against this protest the tower was built and afterwards it became the symbol of Paris. With the Eiffel Tower the extreme possibilities of the new material were demonstrated, and new dimensions were opened up for building in the future.

Another example of the new technological architecture is the **Galerie des Machines** (Gallery of Machines) at the same World Exhibition of 1889 in Paris. It was constructed between 1887-1889; Charles Dutert was its architect and V. Contamin the engineer. It was 420 metres in length and 115 metres in width, the largest span ever to have been achieved until then. **I**t is comparable with the previous record, established in 1868, with the 73 metres of St. Pancras Station in London.

Not only did the covered area grow markedly from one exhibition to the next, but the number of external pavilions also multiplied. The covered area of the London exhibition of 1851 was doubled in Vienna in 1873 and tripled in Philadelphia in 1876. The culmination was this Galerie des Machines. This building had arches spanning 115 metres, whereas those of the 1867 exhibition had a length of only 35 metres. Beside the novel spatial qualities of the Gallery of Machines the ornamentation had less significance. Decoration was confined only to the details of the iron structure but the gallery had white glass with some blue patterning.

The turn of the 20th century

Historicism, when the architecture and the art turned to the previous historical styles continued to take on different shades and forms until the end of the century. The intermingling of styles led to changes in the styles of the turn of the 20th century, when the art and also the architecture searched for new ways instead of using historical architectural elements or motifs.

These cultural breaks marking the end of the century were important because then groups of architects and artists stood against the historicist view searching for new ornaments. These new forms were abstract, or originated from plants or flowers or from folk art. The façades appeared as free compositions. Sometimes also historical mouldings or opening frames were visible but these are different from the previous styles.

By the time the Neo-Baroque buildings were designed, by the second half of the nineteenth century, a reaction had come and spread against such a superficial conception of architecture. It did not originate from architecture, because it concerned problems of social reform and engineering. Most of the architects or painters loathed the industrial development of the age. They did not see, that the Industrial Revolution, while destroying an accepted order and an accepted standard of beauty, created opportunities for a new kind of beauty and order. It offered imaginative new materials and new manufacturing processes and it opened up a vista towards architectural planning on an undreamt-of scale.

New art reviews appeared everywhere and testified to a new start (L'Art moderne in Belgium after 1884, the Studio in England after 1893, Jugend in Germany in 1896, Art et decoration in France in 1897). A new generation Victor Horta in Brussels, Antoni Gaudí in Barcelona, Charles Rennie Mackintosh in Glasgow, Otto Wagner, Joseph Hoffmann and Joseph Maria Olbrich in Vienna together with Henry van de Velde, Hector Guimard, Charles F. A. Voysey and many others who followed, gave definition to a new art, which in very varied forms, expressed the aspiration of breaking away from all harking back to the past.

This European movement, which had all the vitality of a fashion and all its transience, existed between 1892-1914 and particularly 1896-1904. It appeared most of all on the decorative arts and the forms of architecture.

These movements against the Historicism at the turn of the century were different in different areas, and had also different names. In England it was the Arts and Crafts movement, in France and in Belgium Art Nouveau, in Germany Jugendstil, in Italy Art Liberty or Art Floreale, in Austria and in Hungary Secession. But in some books these names were used not only for a specific area. Art Nouveau was used in a wider sense; all of the European styles at the turn of the century were called Art Nouveau. According to this they all belonged to the European Art Nouveau movement. Here in Central Europe Secession became such an overall name of the turn-of-the-century styles.

When the art-historical judgement of the period changed another periodization originated in the mid-twentieth century, which was used mostly in France and England. According to this the summarized name of the **'Turn of the century style'** is used, instead of the European Art Nouveau movement.

This 'Art Nouveau' expression was first used to describe certain types of craft products, which prevented it from being extended to cover architecture, sculpture and painting for some time. One wonders whether it is really possible to group together under one term the work of architects spread across the cities of both Europe and America. The leaders of architectural theory at the turn of the century had to fight on two fronts. They attacked the elaborate façades of the historicists, while rejecting the puritanical vocabulary of the engineers. These architects did develop a new, greatly expanded vocabulary of form, in which can be seen evidence of their struggle against both the traditionalism of the historicists and the orthodoxy of the constructors. This explains their combination of traditional architecture and functional innovation. They drew on a very wide range of different forms and materials; they looked for new ideas instead of the worn-out vocabulary of Historicism. They rejected historical styles, but not their underlying principles.

The turn of the century in Great Britain

The most interesting developments were taking place in Great Britain. In consequence of the early and strong industrialization a problem between the serial production and individuality was developed here already in the mid 19th century. Then was founded a society of the fine arts, the **Pre-Raphaelite Brotherhood**. They turned to the art of the Middle Ages. They admitted that the art before the Raffaello Santi's birth, before 1483 was natural and deep-hearted.

John Ruskin (1819-1900) was a theorist, who aided the Pre-Raphaelite Brotherhood. He preached in his book, in *'The Seven Lamps of Architecture'* in 1849, that the building must be truthful first of all. Even John Ruskin said in 1853: 'Ornamentation is the principal part of architecture'.

The step from theory to practice was taken by **William Morris** (1834-96). First he had undergone the influence of Ruskin and the Pre-Raphaelites. Morris was the first to link up his social activities and his aesthetic theory in the only way. He founded a firm for designing and making furniture, fabrics, wallpaper, carpets, stained glass. His Pre-Raphaelite friends joined him. 'Not until the artist becomes a craftsman again and the craftsman an artist, can art be saved from annihilation by the machine' – this was his belief. To build up a new style on design was sound, to build up in opposition to the technical potentialities of the century. The forms which Morris & Co. chose for their products were inspired by the late Middle Ages. But Morris did not imitate, he recognized Historicism as the danger it was. He steeped himself in the atmosphere and the aesthetic principles of the Middle Ages, and then created something new with a similar flavour and on similar principles.

William Morris was important as a founder of modern architecture. He envisaged a new type of popular architecture based on historical models. He influenced several different areas of culture. He wanted to bring the home into line with the new realities of society. He believed that houses should not be status symbols, but simply buildings fitted to the daily needs of the people who lived in them. He refused, however, to come to terms with technology, the synthetic materials, and industrial methods, which were being developed so rapidly at the time.

'Red House', this brick house was built by the architect **Philip Webb** (1831-1915) for (and with) William Morris, at Bexley Heath in Kent in 1859-60. Webb was Morris' friend and worked with Morris in his studio. He was keen, like Morris, on a new approach to building, and indeed to the whole of culture, based on the craft ideal. Webb created here a simple brick building, obviously Neo-Gothic in style, but with its loose arrangement of both plan and structure, well adapted to its function. This principle subsequently became a central feature of modern architecture.

The German architect Hermann Muthesius wrote at the end of the nineteenth century about this building that this is 'the first house to be designed and built as a unified whole from the inside to the outside'.

At first sight, the Red House looks small and unimpressive, but it has become one of the basic buildings of modern architecture. It is nevertheless part of the Neo-Gothic movement, whose proponents sought to revive, in the industrial age, the medieval craftsman's reliability and honesty in his use of materials.

The building is notable for the refinement of its red brick bonding and the freedom in the treatment of the tiled roof. The modern simplicity of its architectural language, roofs varying according to the part of the building they covered, staircase tower attached to the main structure, projecting chimney stacks – these were all features of the style of the 'Red House'. Whereas the modern simplicity of the vocabulary is striking today, Morris saw his house in the thirteenth-century style and found 'medieval' motifs in the forms of the openings. This unadorned building has many echoes of traditional architecture. The sub-division of the white framed windows or the sculptural organization of the brick building is reminiscent of eighteenth-century English styles.

The two wings join each other at right angles. At the point where they join, there is a staircase giving access to the rooms in both wings. This irregularly L-shaped ground-plan is rational and functional. The windows reveal the organization of the rooms inside the building, without any concern for symmetry or pattern. Here it was not important to build representative

chambers. The rooms are next to each other as if the house was built with additions, such as in the Middle Ages. (Between 1860 and 1865 this house was the focus of William Morris' circle, but in 1865 Morris sold it.)

Richard Norman Shaw (1831-1912) had an influence on the architecture of the turn of the century next to Philip Webb. He was one of the best reputed architects of his time. He was much travelled and read, and helped shape the late Victorian era in England. His architectural style depends on simple forms and clear arrangement, and is generally called 'Queen Anne'. Shaw mixed motives derived from different styles. In his professional career he tried to combine the contemporary appeal of new period styles. He enjoyed playing with motifs of different centuries. He executed many buildings including churches and administrative buildings. He is particularly famous for a series of residential houses, which are designed to fit into row houses on a street.

The **Old Swan House** in London from 1876 was probably the most important of these. Shaw planned it for Wicklam Flower, a solicitor close to the Morris circle.

The character of the building is given largely by the main material used, brick. The three storeys are symmetrical within themselves, but are clearly distinguished from each other and differently composed. Here the symmetry is perfect but Shaw seems to have sought an imaginative variety in the design of the windows. The ground floor has a few narrow windows of different widths. The first floor is emphasized by three wide bow-windows. The second floor has seven narrow, Gothicizing windows with alternation between flat and bay windows. The third storey also has seven windows, but in other form and pattern. The three gabled windows in the roof form the upper edge of the composition.

Shaw placed particular emphasis on the organization of the rooms inside, which were decorated by the firm of Morris and Co. In this building, with its obviously eclectic style, models from the past are so harmoniously and artistically incorporated that architects were influenced by it. The building forms a starting point for twentieth-century residential architecture.

A generation of architects came from Shaw's studio, who followed Morris' ideas and his own forms. These young architects founded the **Arts and Crafts Movement**. The members of this group worked out more and more original interpretations of architectural tradition in designs for town and country houses.

The most brilliant of the members of Arts and Crafts Movement all was **Charles F. Annesley Voysey** (1857-1941). He was connected personally with neither Shaw nor Morris. His novel designs for fabrics, wallpapers, furniture and metalwork especially had such a revolutionizing effect as Morris had. The unaffected nature of Voysey's architecture gives its charm. The boldness of bare walls and long horizontal bands of windows were novelty. His buildings of the 1890s came nearest to the idiom of the Modern Movement.

This house, planned by Voysey in **Broadleys, Windermere** in Cartmel in Lancashire, in 1898, became fashionable in the following decade. Its abstract vocabulary, smooth and white surfaces, marked horizontal lines, arched bay-windows and low roofs slanting down to the windows are typical of Voysey's architecture. Its plan after Voysey's original design shows an L-shaped form. There is a clear division between living and service areas. Voysey used three bay-windows opening the rooms to the commanding view of the panorama.

Another typical Voysey's country house is the **Vodin House**, built in Pyrford Common, in Surrey in 1902. Voysey divided the building in masses, and he gave an interesting rhythm using different sizes and forms of windows on the façades. The aestheticizing medievalism of William Morris and John Ruskin opened the way to the free style of Richard Norman Shaw, Philip Webb and Voysey.

Charles Rennie Mackintosh (1868-1928) was an original Scottish architect working at the turn of the century. In 1897 he received his first major commission for the building of the **Art School in Glasgow**, for which he won the competition. The first section of this building was completed in 1899, and became the sensation of Europe, and had a tremendous influence on continental architecture.

The Glasgow Art School is Mackintosh's best building. It has a long-shaped ground plan. On the street side are large drawing studios, excellently lit by the enormous front

windows. At the back of the building are the teachers' rooms, offices, and other rooms. The left wing contains an assembly hall, the right a library, added in 1907-09.

The front façade is regarded as most typical of Mackintosh's work. The entrance is emphasized by deliberate asymmetry. The big studio windows are on both sides, four to the right, three to the left. Balance is restored by the tower and the windows just beside the entrance. The stone wall and iron railings along the street unite the two parts of the building in a symmetrical rhythm, producing the 'disturbed symmetry' typical of Arts and Crafts Movement. A balance is achieved between stone, glass and metal. The stone provides the volume, the glass the rhythmical surfaces and the iron the linear connection between the two. The façade is distinguished by a combination of the long drawn-out, nostalgic curves with a straight, erect and resilient, angular framework. On the side façades Mackintosh used different, strange architectonic motifs, oriels, reminiscent of mediaeval forms.

The importance of Mackintosh's building lies in the way he has solved a comparatively new building problem with the techniques available at the time, nonetheless respecting local Scottish tradition. A new universality can be seen in the equal emphasis of interior and exterior, and in interiors, including furniture, carpets and crockery.

Mackintosh built some large country houses too. **Windy Hill House**, in Kilmacolm near Glasgow is outstanding. Mackintosh designed both the exterior and the interior of this luxurious house in 1899. The building is sited on a steep hill with a commanding view over the valley. With its steeply pitched roofs, its smooth walls and the windows cut simply into the walls, Windy Hill is only slightly different from the traditional Scottish farm house. The play of light on the stereometrically projecting and receding cubes is its characteristic feature. In this L-shaped ground-plan is a clear division between living and service areas. The free composition of the plan, together with the integrated design of the whole of the interior, makes this a superbly composed ensemble. The interiors are designed from the drawing room fireplace the beds, lamps, all the way to the wall ornaments, built-in furniture and garden furniture.

Mackintosh was more admired in Austria and Germany than in Britain, these countries themselves searched for a new way in the art. Mackintosh had a great success on the Exhibition of Secession in Vienna in 1900.

For the next forty years, the first forty of the twentieth century no English name need here to be mentioned. Great Britain had led Europe and America in architecture and design for a long time, her ascendancy had come to an end. The art of landscape gardening and Adam's style had spread from Britain, the Gothic Revival had been conceived in Britain, the degradation of machine-produced applied art and the constructive reaction against it was due also to Britain. The domestic revival of Morris, Norman Shaw and Voysey was British and the new social conception of a unified art under architectural guidance too. And the first achievements of design completely independent of the past were British too.

The Art Nouveau Movement in France and in Belgium

Art Nouveau was the first novel style on the Continent, a revolutionary European movement, which drew its inspiration from English design. Its name Art Nouveau means simply ‘new art’ and this new style appeared in all of the areas of art. But it remained almost exclusively a style of decoration its role was determinative in Europe. A number of intellectual trends influenced this style such as French nature philosophy and the structural view, which originated from medieval Historicism.

Art Nouveau architecture started in Brussels in Belgium in 1892, when **Victor Horta** (1861-1947) built the **Tassel House**. This house was built for the engineer Tassel, and is famous as the first example of this style. For the first time all the architectural features of Art Nouveau were combined in one building. The house is one of a row, and at first sight it is not markedly different from the buildings on either side of it. On closer inspection, its quality is clearly seen. Although the three main parts of the façade are reminiscent of historical tradition, the openings are interesting, strange and are different from each other.

Each of its three storeys has a large glass window in the middle, where the main rooms are. These windows are wider on the higher storeys. The rooms on either side have windows,

which get narrower toward the top of the building, becoming narrow slits on the third storey, contrasting with the three broad central windows, and the balcony in front of them. The façade is completely symmetrical and slightly curved and broken up into open areas by iron elements. The central part of the façade projects forward, in the manner of the Neo-Baroque, which was at its peak a few decades earlier. Horta put into practice the theories of Viollet-le-Duc, who had earlier advocated the use of iron as a structural element in architecture. Ever since Horta used it so brilliantly, iron has ceased to belong merely to the vocabulary of the engineer, and has become a legitimate architectural means of expression. The motifs of these iron elements were new, originated from nature and had no precedents in architecture.

The reserved exterior of the house hardly suggests the unusual arrangement of the rooms inside. The design of the interior is based on combining space and surface ornamentation into an overall linear composition. Everything is subordinated to the rhythm of the sweeping, curved line, always turning in unexpected directions. This is well demonstrated in the staircase, with its narrow iron column extended by its linear plant ornamentation into the surrounding space. The column is both functional and ornamental. The original furniture, which was matched to each room, is no longer preserved. In 1958, the building was partially altered, and the entrance hall renovated.

Horta's synthesis between space and linear elements of composition, colour and spatial dynamics makes this house one of the key buildings of Art Nouveau architecture.

The **Solvay House** in Brussels is a much admired masterpiece of Art Nouveau architecture. Like earlier the Tassel House this building illustrates the greatness of its architect, Victor Horta. Unlike the Tassel House, it is still preserved in its original condition.

Ernest Solvay was a late nineteenth-century industrialist who became a patron of architecture. This luxurious house is in the same category as other important rich single family houses of the period. Horta was commissioned to design this building in 1893. The work began in 1894, and was completed in 1900. It is situated in one of the great avenues of Brussels, in which other important contemporary buildings can also be found.

The façade, as in the Tassel House, is strictly symmetrical, but the entrance portal is on the left side. The first and the second floors are visually combined by the forward swing of the façade on both sides, and the metal columns extending across both floors and dividing the two window-bays. The clearly proportioned stone façade with its large glass windows is enlivened by the filigree-like iron ornamentation on the balconies beneath the windows and on the first between the window-bays. The plant-like curves of the ornamentation of the window-bays on the third floor and those of the balconies, and the projecting and receding forms of the façade are reminiscent of Baroque or Rococo architecture.

The curvilinear forms of the exterior are repeated in the interior. The metal is openly displayed, but ornamented, and is integral part of the curved spatiality of the total composition of the house. The doors, furniture, lamps and other interior items all contribute to the rhythm of the interior. The main rooms of this five-storey house are on the first floor. They include a music salon, a billiard room and a dining room, which leads onto an open terrace. On the second floor are the more private rooms, including the library, bedrooms and bathroom. The third floor is for children, the completely separate roof floor for servants. The intelligent and economical use of space, and the way that it is left open or closed according to functional requirements, demonstrates the genius of Horta. Ornament and structure are inseparably combined. The building, an organic whole reflects the social, economic, structural and aesthetic characteristics of its time.

The **Eetvelde House** was also built by Horta in Brussels in 1895. Similarly to the Tassel House or the Solvay House it stands on a narrow site. The most remarkable part of the building is its octagonal glazed hall in the middle giving access to all other rooms and providing them with light. The structural elements, the glass cupola and the railing have spectacular ornamental decoration. Horta's abstract vocabulary consists of floral or vegetal motifs, his supports look like the stems of a fantastic plant.

Horta designed his **own house** with similar taste in 1898. Today it is the Musée Horta (the Museum of Horta) in Brussels in the Rue de Américaine. The staircase is also glazed here

but the effect is different. The virtuoso lines of the iron railing, the artistic level of the spaces and the details are similar to those in the previous designs of Horta.

A new and very different motif appeared on the façade of the **Hôtel Max Hallet** (the Max Hallet House) in Brussels, which was designed by Horta in 1906. Horta's earlier façades were nearly flat, but here he planned three very dynamic oriels, closed balconies in an unusual form, which is reminiscent of a flower.

Horta's greatest design was the **Maison du Peuple (the House of the People)** in Brussels, which was built between 1896-99, but later was destroyed. It was planned for a function of a cultural centre for craftsmen and skilled workers. The building contained places of entertainment, offices, commercial institutions and also an auditorium in the roof floor for 1500 people. In the auditorium the structure was shown as a part of the decoration. These spectacular structural elements had fluent curved forms.

There was a claim to the designing of the façade that it should not remind people of a palace façade. This claim, the site and the complicated functional program resulted in the complex ground-plan. The concave curved façade was built nearly entirely of glass and of iron, looking as a homogenous modern structure. Only the railings enriched it with decorative floral iron motifs.

Paul Hankar (1859-1901) was another important architect of the Art Nouveau in Brussels. His famous design is the **façade of the Niguet Departement Store** in Brussels, which he designed in 1897. Here he summarized the Art Nouveau style compactly: large glass surfaces, dynamic, curved lines, which still outline the structure.

Art Nouveau architecture similar to the one in Brussels developed only in Paris, where **Hector Guimard** (1867-1942) was the most significant Art Nouveau architect. He also considered Horta as the founder of the style. Guimard became famous for his **metro stations in Paris** first of all. He designed them in a large variety in 1900, which documents his great fantasy. Due to their simple and free function they could show a wonderful harmony of structure and form. Here Guimard used iron, steel and glass and nearly all of the lines were curved. The slim, plant-like supports remind us of bones but the glass roofs of fans or insect wings. The natural forms were not exactly recognizable only the similarity was important. The 'Metropolitain' inscription was also written with harmonious Art Nouveau letters.

Jugendstil in Germany

Here different effects exercised influences on the German turn of the century. These effects came from England, Belgium and Austria. The Art Nouveau had the greatest influence and this is due to **Henry van de Velde**. (1863-1957). He had an unusually varied and rich course of life. He was born in Antwerp and wanted to become a painter. He was a member of a group of painters called 'Twenties' and in the 1890s he began to deal with designing of furniture and textiles.

In 1895 van de Velde began to build his own house in Uccle near Brussels in Belgium. It is called **Bloemenwerf House**. Although van de Velde was not an architect, the building and the whole of the interior was designed by him, including furniture, wallpaper, carpets, cutlery, plates, book binding, fashion etc. In the last decade of the 19th century, Henry van de Velde advocated general reform on the lines of William Morris' Arts and Crafts Movement. In Belgium as in Great Britain earlier, it was the feeling that life and living were becoming false that generated these new ideas, which van de Velde considered 'common sense'. He thought that he had discovered the key to architecture, the ultimate style. Van de Velde, both painter and theorist, commissioned a building in line with his own ideas. He had described this house in great detail in his autobiography.

The Bloemenwerf House can be seen today to have been very much a product of its time, and it can be regarded as one of the first examples of Art Nouveau in architecture. It is interesting that the non-architect van de Velde used concepts, which other architects at the time were trying to discard: the symmetrical façade, the gable and the mansard roof. The symmetry of the entrance façade is in fact imperceptibly disrupted by the window to the lower

right, and the large main windows, which are now similar, were originally different. There is also a window bay projecting from the adjoining side façade, which breaks the symmetry.

It is the design of the interior that is the most novel feature. The room is clearly defined as a functional area for family life. The central feature of this house is a two-storey hall, giving on to all the rooms on both the ground and first floor. The numerous acute and obtuse angles of the plan betray the amateur in van de Velde. He said himself, 'when I decided to produce plans for our house, I had no idea of architecture whatsoever. I was completely self-taught'. Because of its naïve originality this building is more progressive than the contemporary works of Horta in the same town. Besides the interior design this house was the first so-called 'Gesamtkunstwerk' (globalart-work), which will be mentioned quite a lot in connection with the German Jugendstil.

Nevertheless van de Velde did subsequently produce some remarkably mature buildings: in the Hage, in Cologne and here in Weimar.

He had his first great successes in 1897 in Dresden, and after that he got more and more commissions. There he designed plenty of furniture for shops and took part in exhibitions, among other things in the Secession Exhibition in Munich in 1899. Between 1892-1914 he was commissioned to be the director of the **School of Applied Arts in Weimar**. Here he designed some buildings for the school. His first building of the School of Applied Arts in Weimar, the 'Kunstschule' was built in 1904 with L-shaped ground plan. The main entrance is diagonal between the two perpendicular wings. The façades were simple with functionally large windows.

The second building of the School of Applied Arts, the 'Kunstgewerbeschule' was built by van de Velde in 1906. The building has a symmetrical main façade with large windows on the roof floor to provide the schoolrooms with more light. This style is more geometrical than the French Art Nouveau only the iron railings on the first floor remind us of Horta's railings, but here the details are geometrical not ornamental.

In 1907 the Deutscher Werkbund (the German Art Union) was established in Munich, which became an important step for the later development of the architecture. Van de Velde was also a founder member. Van de Velde designed scanty but his own architectural solution was a **theatre**, which he built for the **Werkbund Exhibition in Cologne** in 1914, the same exhibition which saw Gropius' famous model factory. The theatre has simple, functional ground plan and also simple, flat, white façades. Only the concave curved entrance is a familiar Art Nouveau motif.

The 'Jugendstil' name originates from the new art review 'Jugend', which appeared in 1896 in Germany. This was the first coloured periodical, and the title 'Jugend' means youth in English.

The **Atelier Elvira** can be considered the formal summary or a symbolical building of the German Jugendstil. It was designed by **August Endell** (1871-1925) in 1897 in Munich. It was built as a rare architectural experiment; Endell made a lot of studies. An atelier or a photo studio required only little light that is why Endell designed few windows. The abstract, red and blue, large relief became the main motif of the façade. The asymmetrical arrangement of the different openings strengthened the disharmony between surfaces and openings. When Endell was asked what this relief represented, he answered: nothing. The building was later destroyed.

The Jugendstil was indeed different from the English Arts and Crafts movement because it had no vernacular or historical origin, and it was different from the Art Nouveau because it had no structural impulse. The Jugendstil was suggestive and its expressive effect was undeniable.

The **Darmstadt artist's colony** was established by the Grand Duke of Hessen Ernst Ludwig. His most famous architect was **Joseph Maria Olbrich** (1867-1908). He was at first a participant of the Vienna Secession. After attracting a lot of attention with his Secession Gallery in Vienna, Olbrich was invited by the Grand Duke Ernst Ludwig to Darmstadt in 1899, to take charge of one of the great exhibitions of modern architecture, entitled *'Ein Dokument Deutscher*

Kunst' ('A Document of German Art') and to begin building the artists' colony on the Matildenhöhe (the heights of Matilda).

Olbrich executed most of the buildings himself. He also designed the gardens, the main entrance to the artists' colony, the huge Ernst Ludwig House, his own private house, the orchestra stand and the Pavilion of the Arts. He planned the whole settlement, which makes this one of the very few early examples of the Jugendstil town planning.

The **Hochzeitsturm (the Wedding Tower)** on the Matildenhöhe was completed in 1908 and is the greatest of Olbrich's Darmstadt buildings. It crowns the whole environmental complex. With its arch-shaped roof, the tower is a dominant feature of the town; it reminds us of a hand with five fingers. It was built to celebrate the wedding of the Grand Duke and is a symbolic accent in an area full of symbols of Life and Marriage. The simple arrangement of the windows is asymmetrically composed. They are running round the corner of the tower in horizontal bands. Together the Hochzeitsturm and the Exhibition building or Palace of Free Arts (also built in 1908) form a spatially related group of buildings and represent a new approach in town planning.

Olbrich designed in Darmstadt a lot of buildings such as his own house in 1900 with a simple mass and the huge **Ernst Ludwig House** in 1899. The larger building was built for studios and for community purposes. It has no echoes of past styles either. The main motif of the building is the arched entrance with fine ornamental reliefs flanked by the enormous, monumental man and woman sculptures.

Secession in Austria

The movement called 'Secession' (Sezession) was founded by artists and architects in 1897 in Vienna as a protest against the conventional artistic establishment. The movement became well-known by way of the new art review 'Ver Sacrum', around which youth artists and architects grouped. The title of the review means 'Holy Spring' and means a spring sacrifice in the Ancient Roman Empire. In the first number of the 'Ver Sacrum' the chosen name of the movement, 'Secession' was explained. It means 'walking-out' or 'marching-out' in English, and refers symbolically to the 'secessio plebis', to an event in the 5th century B.C. in the Ancient Rome, when the plebeians walked out from Rome to the Mons Sacer (to the Holy Hill) to demonstrate their protest against their exclusion from the political rights. This wilful but peaceful 'walking-out' formed the basis of the new art against Academicism.

This style started as a local variant of the Art Nouveau nevertheless Secession became the turning point of the style between the pageantry of the Art Nouveau and the severity of the modern architecture.

Otto Wagner (1841-1918) was the leading figure of the Vienna Secession. He began to study architecture in Berlin, and then in Vienna Siccardsburg and van der Nüll were his teachers. In his first period Wagner designed his buildings according to Historicism but he was not successful enough. **His first own villa** in the suburb of Vienna represents this period. It was built in 1886 in free Neo-Renaissance style. The building is symmetrical and consists of three parts. In the middle gilded Ionic columns emphasized the recessed entrance.

From 1894 he taught at the Vienna Academy. Here he got to know two of his talented pupils, Joseph Maria Olbrich and Joseph Hoffmann (1870-1956) who became his colleges. In 1895 he published his book titled *'Moderne Architektur'* (Modern Architecture). In 1897 when the new movement started in Vienna he was already 56 years old but he broke with Historicism and he changed his historicizing style to the new Secessionist one.

His second villa, which he designed for himself in 1912 next to his own previous villa, represents the difference between Historicism and Secession. This was one of his latest buildings and got symbolical meaning. Its ground plan was planned rationally and asymmetrically according to the function. The geometrical mass was not without any ornamentation, the ceramic tiling, the projecting entablature and the frame of the door ensured its decoration.

In 1898 the Stadtbahn (the subsurface railway and tram system) was built in Vienna and Otto Wagner designed its stations. The **Karlsplatz Station** was the first and was violently

attacked. The contemporaries considered it too simple and undecorated. The public opinion was used to the decoration of Austrian Baroque and Vienna Historicism.

The building has a simple and economical structure, whose parts were produced by prefabrication. The iron structure and the prefabricated stone elements made it possible to produce them in a series. The form of the building shows still some historical references such as the stressed mass in the middle with its arched roof. The façade is articulated by the structure and is decorated by painted floral motifs. Here the simple mass is combined by the rich surface ornament. Wagner used this solution for his next designs.

The **Majolica House** in Vienna was designed by Otto Wagner in 1898. The house takes its name from the coloured tiles, which protect it from weathering. It is a six-storey house, with nine regular window openings, flanked by recessed bays at the ends. The building is connected to the adjacent house by a balcony. The symmetrical design and the sculptural and painted floral decoration of the building are characteristic features of the Secessionist architecture.

The framed structure of the building is covered with an extremely delicate pattern of colours and forms. The majolica slabs, partly for which Otto Wagner had to pay himself, are arranged in a subtly balanced pattern of forms and colours (pink, mauve and turquoise). The filigree bronze-coloured balcony railings and metal supports emphasize the severe symmetry of the house.

The Majolica House is a complete technical solution of the building problem of a city apartment block, complemented by a complete artistic solution as well. The external skin of the building not only provides a solution to the problem of weathering, but is an outstanding example of the Secessionist decoration. Wagner was a passionate advocate of the polychrome colouring against the monochrome of traditional architecture.

Otto Wagner's **Steinhof church** is one of the most important religious buildings at the turn of the century. Wagner tried, in his own way, to create a church adapted to contemporary life. This building represented a new tendency in Wagner's style.

The monumental church on the Steinhof Asylum was built on the then outskirts of Vienna between 1903-07. This is one of the masterpieces of Otto Wagner. The move of hospitals out of cities to more rural sites was a universal tendency. The Steinhof church is the dominant feature in the complex of buildings, which make up the Lower Austria Lunatic Asylum in the south of Vienna.

The base of the building is made of irregular stones, above which the walls are clad with white slabs. The plan is composed of two rectangles and these intersect, thus forming a cross-shape. The entrance is emphasized by pillars and a large arched window. The four bronze angels, standing above the entrance on pillars, repeat the motif of the bronze figures on the two small towers on the entrance side of the building. The roof has a high dome, which has double iron structure that is why the dome is higher on the outside than on the inside.

The exterior is clearly composed. Viennese artists co-operated on the decoration of the building. Byzantine ornamentation fits into the geometrical pattern. Stressing the abstract vocabulary of volumes the building is largely rich in detail decoration such as metal bolts arranged in a geometric pattern – a kind of functional ornament. Instead of the historical knowledge the knowledge of engineering and craft appeared.

This unusual and long misunderstood building is in fact part of a continuing European architectural tradition. As with most of Wagner's buildings, it was violently attacked when first built and is still considered controversial. Protests were made, particularly by the religious establishment, against the attempt to adapt a House of God to modern life.

Otto Wagner's **Postal Savings Bank** in Vienna represents the actual turn to the new style for the new century. It is a key work not only in Wagner's life-work but in Viennese Secession architecture and in the development of the twentieth-century architecture.

Wagner entered the competition for this building in 1903. Even though he did not comply with the conditions, putting all the counters in one room, he won first prize and was awarded the commission. He put the counters in the courtyard of the building under one huge glass roof. The banking hall has exposed iron posts and a glass roof, three-centred in section. From this hall it was only one step into the cubic glass and iron structures of the so-called International Modern movement. The glass covered hall had a clarity and lightness not

previously achieved and is still impressive today. The hall has warm-air heating, and a special heater between the ceiling and the roof, which keeps the roof free of snow, ensuring that the interior is always well lit. The floor is made of glass bricks arranged in a geometric pattern, thus letting light into the basement as well.

The massive six-storey structure, with its enormous ornamental roof decoration, was built from 1904 to 06. Between 1910 and 12 a special room for dealings in securities was added. The exterior skin of the building was made weather resistant, on the street side, by the use of granite facing on the base and thin white marble slabs above. They are pegged to the wall by aluminium bolts to make it obvious that they are a facing only. On the courtyard side it is faced entirely with ceramic slabs, which are held in place also with aluminium bolts arranged in a geometric pattern – a kind of functional ornamentation.

The strict symmetry of the entrance façade is emphasized by the central element and balcony in front of the governor's room and by the letters beneath the roof works. The vestibule has a staircase with cubic posts and aluminium balusters. The building is one of the few modern buildings to fit entirely successfully into its environment. This functional, light building was built long before the arrival of 'rational architecture'. It had a strong influence on the younger generation of architects at that time.

The Postal Savings Bank was built with the most modern building materials of the time. All the ceilings in the rest of the building, for instance, are made of reinforced concrete, while the front roof supports, bolts, railings, warm-air fans and the supports on the inside, are made of aluminium or are aluminium-clad.

In 1898 an important exhibition building was erected in Vienna, the **Secession Gallery**, which was designed by a pupil of Otto Wagner, by the thirty-year-old **Joseph Maria Olbrich**. The movement called Secession was to have its own building. It was Olbrich's first building. Previously he had travelled in Italy and worked in Wagner's office on the Vienna tram system. His first independent work, as with Mackintosh, had world-wide influence and brought him further important commissions, such as the invitation from Ernst Ludwig von Hessen in Darmstadt to found an artists' colony and permanent exhibition of architecture.

The Vienna Secession Gallery is basically rectangular. It has a simple arrangement of symmetrically composed cubes. The two symmetrical blocks of the entrance façade, with their large unadorned wall surfaces, are joined by a cross piece above the recessed entrance. Behind this rises a three-quarter-spherical dome of metal leaves, set amidst four tapering Egyptian-type towers. It is this dome which gives the building its characteristic appearance from a distance. It is a symbol of the integration of nature and art. Although Olbrich used the basic geometrical forms, rectangles, cubes and spheres, extremely well, they are not used with complete geometric purity, but in imitation of historical prototypes. The exhibition rooms inside are superbly lit by glass roofs.

Despite English influences, it was an individualistic building. The charm of this sensitively proportioned building, based on cubic form, lies in the interplay of decorated and undecorated elements, and the way it is crowned by its floral sphere. The ornamental accents on particular parts of the building are intended to give symbolic architectural expression to the contents of the building. The bronze doors are designed by Gustav Klimt.

Antoni Gaudí in Spain

Art Nouveau and the other turn-of-the-century styles remained almost exclusively styles of decoration. The only exception to this rule was Antoni Gaudí in Barcelona, working on the periphery of European events. **Antoni Gaudí** (1852-1926) was probably the most particular and the most important European architect of the period around 1900. His work marks a transition from Historicism to a new style of architecture. Gaudí made this transition despite continuing to use traditional building materials.

Gaudí's style was individual and was full of fantasy, in spite of the certain connections with Spanish Late Gothic and Spanish Baroque and also of the connections with the architecture of Morocco. He mixed these historical traditions partly with the effects of the Arts

and Crafts movement and the Art Nouveau architecture. He had special sensitivity toward the craftsmanship and had particular static sense.

The start of his career was successful. The rich industrialist Eusebi Güell became his friend and also his long-time patron and gave some commissions to Gaudí. His first important building was a hunting lodge designed in 1883 also for Güell.

In the same year Gaudí designed the **Casa Vicens** (Vicens House) in Barcelona. Vicens was also an industrialist who had a brickyard as also Güell had. Gaudí used brick for structure and for tiling independently of his assignors too. Gaudí's earlier works were surprisingly decorative and colourful and Moorish effect can be seen on them. That is noticeable also here what will be characteristic of Gaudí's later buildings. The ground floor is closed, the upper floors became freer and looser next the roof has a lot of superstructures, which are very rich in forms. The abstract vocabulary of the surfaces is undulating and colourful and the effect is enriched by rubble stone and ceramic inlays.

Gaudí worked on several buildings in Barcelona, but his greatest effort went into the building of the **Church of the Sagrada Familia** (of the Holy Family). Although the enormous church remained incomplete on his death, it has become the symbol of Barcelona.

Gaudí took over work on the church in 1884 and from then on applied himself to it with desperate intensity. The church had actually been started in 1875, and its form was based on a Neo-Gothic design by Francisco de Paula de Villar. The Joseph Chapel in the Crypt, designed by Gaudí, was available for use in 1885. The work continued without interruption until 1893. Between 1891 and 1903 the portal and existing parts of the transept of the Birth of Christ were built. In the following years up to Gaudí's death, the towers on the eastern transept were constructed. They are higher than 100 metres. Although these represent only a small part of the original plan, they have become a dominant symbol for the whole town.

Gaudí spent the last years of his life very near the church, in a little room where he lived and worked. Here he experimented with weights on wires in order to calculate the strength of his arches, made casts of living people and animals, and produced designs for mosaics and paintings. Most of the rest of the plans survive. Gaudí, the artist, in co-operation with his architects and workers, opened up a new world of creative possibilities. He had a vision of a new art, and of a modern religion nourished by the great tradition of the past.

After Gaudí's death (in 1926) the construction was interrupted. In 1954 the building was continued with the western transept, with the façade of the Passion. It was finished in 1985 on the 50th anniversary of Gaudí's death. The building of the nearly 100 metre long church is continued nowadays again but is not finished yet. If it were finished sometime the central tower would be almost 170 metres high. The superb fragment of the Sagrada Familia demonstrated the inevitable failure of an attempt to build a cathedral with traditional techniques and materials at a time, when more attention was being paid to other building problems, demanding new techniques and materials.

On the transept front of the church of the Sagrada Familia, on the façade of the Nativity (Birth of Christ), the forms are simultaneously historical and dreamlike. Here the forms grow like sugar-loaves and ant hills.

Gaudí executed several projects besides his great uncompleted church of the Sagrada Familia. In 1898 he was commissioned to build a small **chapel for the Colonia Güell** (Güell Colony), a workers' estate in Santa Coloma near Barcelona. Gaudí used this as an opportunity to experiment. For the first ten years he produced drawings and theory. The building work was not begun until 1908, and progressed so slowly that by 1915, when it was finally stopped, only the **crypt** and the entrance were completed. These parts were dedicated then.

This incomplete building is one of the most interesting of Gaudí's works. The vaults, bricked and ornamented with pieces of coloured tiles, were not mathematically calculated, but were based on trial-and-error experiments using weights on strings. The supporting columns are set at various angles following the lines of the arches. This allows them to take up both the vertical and horizontal thrusts, without buttresses. The whole seems to have grown rather than to have been built. Some of the pillars are made of a single stone, some of brick, some covered with a stone mosaic. They are similar to each other and different from each other.

Here in Santa Coloma Gaudí used only simple materials even rubbish, available in the neighbourhood. Columns and arches were decorated with broken tiles. The irregular windows are all different in form, colour and size. Gaudí's creative use of materials produces a new awareness of surface values. Regularly and irregularly laid bricks, raw and smoothed stone and glazed tiles are all intermixed in this building. Every window and every pillar in this brilliant fragment has its own shape. Hyperbolic paraboloids, curved walls, and sloping pillars are all used to achieve maximum strength. There exists a drawing in which Gaudí showed how he envisaged the church complete. It was to have had an overall sculptural form with towers similar to the towers of the Sagrada Familia.

In 1900 Gaudí designed the **Güell Park** in Barcelona as a part of a large-scale housing estate but nowadays it is a city park. The original plan for this site, as drawn up by Gaudí and his long-time patron, the industrialist Eusebi Güell, envisaged a residential estate of about nine and a half acres with a shopping centre and an open-air theatre. This fascinating project was never executed. Work on it was stopped in 1914, and what remains is an incomplete example of Gaudí's environmental planning. The way he combined art, nature, building, garden and the view over the town right up to the sea was quite new.

Even though the estate could not be executed as originally planned, there remains today the public park. On the sloping site are extensive gardens, arcades, winding paths, flights of stairs, terraces, tunnels, gates, statues, fountains, benches and pavilions, and a splendid view over Barcelona and Gaudí's unfinished Sagrada Familia church right up to the sea. The wild trees and plants in the area were left largely undisturbed.

In the centre of the park, there is a large artificial terrace supported on a colonnade. This was originally intended to be a place of assembly and open-air theatre for the planned workers' estate. Along the edge of the terrace there is a curving bench decorated with pieces of coloured ceramic by Gaudí and Josep Jujol. The form of the bench is not only decorative but also allows for either informal groupings or privacy for people sitting down.

The brilliant colourfulness of the ceramic pattern has an imaginative power, and North African influences can be clearly seen. In the structures of the Park Güell columns are placed out of plumb to follow the ideal line of physical strength without buttresses.

Here Gaudí acted as planner, architect, painter, sculptor, landscape artist and entrepreneur, thus more than fulfilling Ruskin's requirement that an architect be a painter and a sculptor as well. Gaudí's work was dismissed for a long time as the product of undisciplined imagination and over-indulgence. On the contrary, everything was part of a total concept. Gaudí was a constructor and environmental planner, who saw Gothic, Classical and Oriental styles merging into one. He wanted to produce order out of multiplicity, and opened up a new world of experience.

In 1905 Gaudí built two blocks of flats in Barcelona. One of them is the **Casa Batlló** (the Batlló House). Gaudí got the commission to reconstruct a palace for the rich industrialist Josep Batlló. Gaudí retained the existing rectangular structures of the building but rebuilt and formed the façade and the interiors free and with vitality.

The two lower storeys became the most characteristic part of the façade with the large undulating individual openings. On the upper floors the façade is flat only the railings ripple. Here the roofs bend like waves or snakes. The surfaces display majolica facings or facings consisting of bits of broken cups and plates set in thick mortar. Here Gaudí used only free-hand drawings as plans for the building as he did at the Sagrada Familia and the crypt of the Güell Colony.

Gaudí's other important apartment block is the **Casa Milá** (Milá House) in Barcelona built between 1905-10. Like almost all Gaudí's buildings, it is incomplete but even today it makes a lively impact. It is called 'La Pedrera' ('the stone quarry') because its shape is reminiscent of natural forms. The curved contours of the five horizontally ranged storeys are a unique motif. The strange demonic chimney forms on the roof were originally intended to form a religious bestiary.

The building is composed of an emphatic base, five upper storeys (all with different floor plans) and a roof area. The apparent irregularity of the building turns out, on closer inspection, to be an artistically organized, basically symmetrical system. Inside there are two main courts,

of different size, with unusually shaped wrought iron gates and stairs. The whole of the exterior is roughened by hammer. This gives an even light-catching surface interrupted only by the iron railings on the balconies. Overall, the stone looks like reinforced concrete.

Gaudí inherited the way of thinking of a craftsman from the Arts and Crafts movement mixed with the nature in its centre from the Art Nouveau. Gaudí broke down the geometrical order of the European architecture on a plastic stack of colours and forms. He rejected the traditional classical architecture. His style was essentially original – indeed original in the extreme.

Scandinavia

At the turn of the century a particular architecture appeared in Scandinavia.

The Finnish **Helsinki railway station** of 1910-16 was built by **Eliel Saarinen** (1873-1950) **and his partners**, Hermann Gesellius (1874-1916) and Armas Lindgreen (1874-1929). It is much bolder in its plan, with the asymmetrically set tower and is bolder also in the forms used. The mass follows the functional articulation and is patiently inspired by the Vienna Secession. The simple rhythm of the façades and the heavy rustication used throughout gives the building some elementary character.

Ragnar Östberg's **Stockholm City Hall** in Sweden was begun in 1909 but finished only in 1923. It was inspired by the Scandinavian style of about 1600, but hardly appears in the façades. It is an elegant mixture of Northern Renaissance and of the spiky decorative motifs typical of the 1920s. The simple mass was enriched by a high, freely shaped tower.

The Turn of the century in Hungary

The year of the Millennium of 1896, both practically and symbolically speaking, represents the beginning of a new age. World-wide the period immediately prior to 1900 saw the emergence of those tendencies, which were to rejuvenate architecture in the 20th century. The turn of the century inspired many different architectural styles. Late Historicism lingered on, and Secession often mixed with historical styles. Apart from various foreign influences local ambition can also be detected.

Particularly interesting is the work of **Ödön Lechner** (1845-1919) in the style of Hungarian Secession, who strove after the creation of a unique Hungarian Architectural style. His programme was to realise an architecture which is simultaneously modern and national, and to establish a national language of form by introducing the ornaments of folk-art in city architecture.

The Budapest **Museum of Applied Arts** (IX. Üllői St. 33-37.) is the first mature example of the anti-Historicist and nationally inspired secessionist architecture. It was constructed from 1891 to house an important collection of applied arts made available for study and also to the general public. Lechner won the competition on the architectural plan together with Gyula Pártos.

This building was the first opportunity for Lechner to completely realise his architectural and artistic ideas. The Museum of Applied Arts was the first museum in Europe to depart from historicist manner, and the first clear manifestation of Lechner's individual style. In each previous project Lechner had searched for the harmonious combination of the architectural elements developed from Hungarian folk-art motif and architectural structure. Through Hungary's eastern origins, Lechner discovered the monumental architecture of India. The Museum can also be consisted as a formal relative of the examples of 'Indian Style' wide-spread during the last century, especially in England.

An important motif of the façade became the windows, varying in size and shape in accordance with the demands of internal lighting. The façade was ornamented with a variety of Zsolnay ceramics, manufactured partially to Lechner's personal instructions by the factory in Pécs. These ceramics were to provide the new national architectural style with a long lasting and cheap material which fulfilled the rich formal and colour demands of Lechner's ornamentation.

In the masterful internal spaces Lechner used modern steel-structures. These structures were left exposed in the large exhibition hall, and hidden behind richly ornamented (and

originally colourfully painted) plaster walls in the double-height entrance hall and in the upstairs exhibition rooms. The supporting structure of the main glass-covered exhibition hall, with its unique ornamental beams and consoles prove that Lechner succeeded in finding the best suited form for the most up-to-date technical solution of his time.

The **Hungarian National Institute of Geology** (Budapest XIV. Stefánia St. 14.) was constructed immediately following the completion of the Museum of Applied Arts, from 1896 to 99. Amongst Ödön Lechner's masterpieces, this building is the best representative of the original state. The building is open to the public, functioning as a Museum of Geology, originally the third floor was constructed for this purpose.

A distinctive element of the building is the steep roof, covered with sky blue tiles. A direct Indian influence such as that apparent on the Museum of Applied Arts is completely missing from the architecture of the Institute. The network of brick banding, which frames the windows and the vertical emphasis of the corner pilasters creates a carpet-like pattern on the façade. Ceramic ornaments appear in the plastered areas between the brick banding. Lechner enlarged folk-art elements, convex flower patterns into architectural motifs. These elements became widely used elements in the architectural language of Lechner's followers.

Postal Savings Bank (Budapest V. Hold St. 4.) was built by Ödön Lechner between 1896 and 1901. It is his main work. Lechner won this commission on the basis of a competition entry. The architect's task was to design a bank, which primarily handled the small savings of the person-on-the-street. The design aroused unusually intense public interest and major official resistance. A ministerial decree was announced against the spending of public funds on buildings of this style.

The layout and the structure of the bank are fairly simple. Richness can be traced not in the materials but in the forms and symbols of the building. Lechner's vernacularly inspired architectural language rises to the vanguard of contemporary European architecture. The monumental, majestic and peaceful façades are richly decorated with mosaics, curvaceous windows and panels between them. The façades are topped with a sinuous, plastically formed moulding and a dynamic, undulating roof line of a boldness, which can only be compared with Gaudí's. The forms and symbols on the façades symbolise the nation's richness and glorious past. The glass dome above the cashier hall was the artistic and engineering sensation of the building. Lechner designed a single-layered dome vault of purpose-made glass bricks.

Géza Márkus (1872-1912) belongs to the group of Lechner's followers. On his building, on the Cifra Palace in Kecskemét (1902) Márkus adopted the characteristic forms of his master, with folk-art motifs ornamenting the façade.

István Medgyaszai (1877-1959) also followed this tradition in his Veszprém Theatre built in 1908. The ornamentations on its flat façades originated in Hungarian folk-art. Medgyaszai was the first in Hungary who used reinforced concrete structures for his buildings.

The **Gresham Palace** stands on Széchenyi (earlier Roosevelt) Square. Now it is the Four Season Hotel, but originally was built for the Palace of the Gresham Insurance Company, and used as an apartment and retail complex. **Zsigmond Quittner** designed it in 1907 as the most luxurious apartment development of the capital. It was built with the utmost precision and level of luxury directly upon the axis of Lánchíd (Chain Bridge). The whole building is characterized by the three dimensional, sculptural handling of novelly formed elements. The sculptural ornamentation, the stained-glass windows of the staircase opening from skylit passages are important examples for the Hungarian art of the turn of the century.

The younger generation learning from the outcomes of the Arts and Crafts Movement and the Finnish National Romanticism discovered the attributes of a National character in the structure, using the material, and romantic composition of the Middle Ages and vernacular architecture. The main representative of this movement was **Károly Kós** (1883–1977). **His own house in Sztána** in Transylvania (now in Romania) looks like a simple vernacular house, but its ground-plan is unique and it has a complex shape.

The **Municipal Zoological and Botanical Garden** is one of the oldest zoo parks in Central Europe, it was opened as a private zoo to the public in 1866. The Budapest Municipal Council purchased the old zoo, which had gone bankrupt at the turn of the century and

subsequently began an ambitious reconstruction programme in 1909. A living village was achieved through the building of pavilions based in part upon vernacular traditions and also giving reference to the character of the environment from which the various animals originated.

The overall character of the Municipal Zoo and Gardens pavilions can be attributed to the work of Károly Kós and Dezső Zrumecky, although several of the larger buildings are the work of Kornél Neuschloss-Knüssli. The pavilions are integral to the whole composition, although their exotic character represents an extremity.

The pavilions designed by Kós and Zrumecky follow vernacular traditions as their Birdhouse from 1909-10. The steeple in the middle recalls Transylvanian bell-towers, and also the other motifs originated from vernacular architecture. The Deerhouse in the Zoo was designed in 1909 by Kós. It looks like a Transylvanian peasant-cottage, but the ground-plan is functional.

The designers paid attention to the entire environment: detail and decoration reached even the garden furniture, the fences, benches, rubbish containers, all decorated in the same style. This uniformly high quality example of National traditions in Hungarian architecture was badly damaged in the Second World War.

The **Wekerle Housing Estate** is one of the largest and most significant 'Garden Cities' in Europe. It contained 920 apartments and about four thousand inhabitants. Both the layout of the estate and the housing types were determined by an architectural competition. Altogether some fifteen architects took part in the design of the various residential and public buildings. The estate was begun in 1909 and had been virtually completed by the First World War. The houses of the estate present a varied appearance, partly as a consequence of the diversity of plans and partly due to the countlessly varied orientations made possible by the layout of the estate. Houses of one, two, four or six flats were built in such a way that each family was provided with their own vegetable gardens. This, together with the rural character of the housing was a major attracting factor and this is still the case today.

The main gateway buildings and immediately adjacent apartment blocks flanking the main square (Nos. 2/3.) were designed by Károly Kós, whose statue stands on the square, and now the square bears his name. Nos. 10 and 11 opposite were designed by Dezső Zrumeczky. Each house is different, but all of them have vernacular elements on their façades, originating from Hungarian folk-art. The estate could be considered as an early example of mass production, which avoided monotony.

These innovating architects of Europe broke with the historical aesthetics of the 19th century. They rediscovered the universal elements and principles of architecture, and thus discreetly prepared the way for the modernist revolution of the 1920s.

Pre-Modern architecture

Modernizing tendencies, which began to develop in the 18th century and developed entirely in the 19th century, turned into a new period at the turn of the 20th century. Before the First World War, the effects of the economic and social changes were perceptible also in the architecture. In the short period between the two World Wars, the revolution of the Modern Movement took place, and the new architectural view and practice of the Avant-garde was formed. There lies the fundamental difference between the situations of different countries. Germany, France and America had the lion's share in the establishment of modern architecture.

France was the first country to design houses of a genuine concrete character. These buildings were designed in the first years of the 20th century and were due to Tony Garnier and Auguste Perret.

Tony Garnier (1869-1948) had worked on an **ideal Industrial City** in 1904 in Rome. This town could be built in his native valley of the Rhone. It was pioneer work from the point of view of planning, but also from the point of view of appearance of the buildings. They were all essentially to be of concrete, private houses were severely cubic, and public buildings had cantilevering canopies. The Cité Industrielle was exhibited in 1904 but published in 1917.

Auguste Perret (1874-1954) had the priority of demonstrating concrete as a more than utilitarian material. In his work he achieved a substantial advance in the use of concrete; he found an expression for reinforced concrete for this new material.

His famous **block of flats at 25 of the Rue Franklin in Paris**, dates from 1902 to 3, came to play a most important part in the development of architecture. In this house he had his office for many years. The house was remarkable for the way in which the architect used the reinforced concrete skeleton for the framework, the floors and the walls. By this means he achieved a hitherto unknown freedom of planning, as well as being able to fill in the outer walls mainly with glass. The façade is no longer treated as the surface of a cube, being an open form so constructed as to create an organic whole with the skeleton.

Then Perret built a garage in the Rue Ponthieu, in 1905 where the concrete is exposed without any cladding.

Perret's **Theatre des Champs Elysées** in Paris was the first public building constructed of reinforced concrete between 1911 and 14. The French reinforced concrete architecture with its structural view will be continued by Le Corbusier who was Perret's collaborator.

Also in the first decade of the 20th century Josef Hoffmann and Adolf Loos designed buildings and their interiors in this equally novel but equally topical pre-modern style.

Josef Hoffmann (1870-1956) was of Czech origin, but he was the Austrian architect's, Otto Wagner's pupil, and also a founder of the Secession in Vienna. In his first works he built his buildings with Secessionist features, but in the pre-modern era he planned them with rectangular forms. His most famous work is the **Palace Stocklet in Brussels** in Belgium from 1905. He designed it in his geometrical period, by the means of the proportions of plans, masses and surfaces. The result is a nobly simple, but spectacular palace.

It is partly two, partly three-storied, based on a square module and on the colours black and white. The main façade has a hidden symmetry, concealed by the tower, which narrows in steps towards the top, and by the annexes. The vertical glass band of the staircase window on the street façade leads visually up to the tower. The strict rectangularity of the building is relieved by the semicircular projections of the bow window next to the main entrance, and of the eastern end of the garden façade.

The main material used on the outside is white marble slabs. The framing of all edges, corners, windows and doors with gilt ornamental metal friezes, made the walls seem like mere surfaces without any load bearing functions. The severity of the architecture is relieved by roof garden terraces, garden passages and railings, filigree-like iron work round the balconies and the tower, and metal railings running round the street.

Adolf Loos (1870-1933) was a determined character of the pre-modern era. He designed some interiors; one of the best of these is the **American Bar** (previously the Kärtnerbar) in Vienna from 1907. Exterior and interior were originally designed as one inseparable unit. The exterior is now altered, but the interior can be seen in its original form.

The dimensions of the very small space were completely changed by the interior effects. To the left of the entrance, the bar stretches along the entire length of the room. The wall behind it, like all the other walls in the room, is extended visually by mirrors. The ceiling extends the space upwards with its coffered forms. Opposite the bar are two seating-bays, with tables. The expensive furnishing materials were all chosen to heighten the effect of quality and spaciousness. The atmosphere in this little bar is exclusive and harmonious, which were reached by means of illusion and without any historical or ornamental motifs.

Adolf Loos' most famous building is the Goldmann and Salatsch Building, a **Department Store on the Michaelerplatz** from 1910. It stands in a dominant position between two streets in Vienna. It is opposite the neo-Baroque façade of the Hofburg (designed by Semper and Hasenauer in 1881).

The building had almost no decoration on it. This so disturbed the contemporary Viennese that building work had to be stopped for a time. On closer inspection the building can be seen to be most carefully composed. The domestic and commercial sectors are clearly separated from each other by the use of different materials and types of façade, above and below. The two under storeys are clad with marble, but the four residential storeys above are simply plastered. The regularly distributed windows were originally cut straight into the walls

without any decoration. This was considered so intolerable by people at the time that various suggestions were made for altering the façade. In the end only flower boxes were added.

The apparently undecorated façade has some historical references yet, as the columns which support the mezzanine storey, and the two horizontal cornices running across the façade, and the marble cladding of the ground floor. The compositional technique is the same which was previously formulated by Louis Sullivan in Chicago both in theory and practice, in his approach to the high-rise office block.

Although Adolf Loos joined to the Viennese Secession in his early years, later he turned against it. He preached that 'decorating is guilty'. He planned more buildings with such considerations, as the **Steiner house** in Vienna from 1910. This consideration became very important in the next decades.

In **Germany** the Deutscher Werkbund was founded in 1907. It was intended as a meeting place of progressive manufacturers, architects and designers.

In 1908 the architect **Peter Behrens** (1868-1940) was asked by the Allgemeine Elektrizitäts-Gesellschaft of Berlin, (the AEG), to take charge of the design of their new buildings, their products, and even their packaging. His **AEG Turbine Factory** of 1909 proclaims a new dignity for industrial architecture. Walter Gropius wrote in 1911, 'this building is the only example of an individualistic artistic treatment of a modern engineering structure with modern building materials (iron and steel)'. Iron and glass are combined with the solid walls on the corners. The huge corner pylons are historical references and hide the light steel structure on the main façade. Practicality and monumentality are powerfully united in this building.

The first work of Behrens' most important pupil, **Walter Gropius** (1883-1969) was also a factory, the **Fagus Shoe-last Factory** at Alfeld an der Leine near Hanover. It was constructed between 1911 and 14 in co-operation with Adolf Meyer.

The building is one of the epoch-making works of Modern architecture. Gropius developed the tradition of industrial architecture inherited from Behrens' AEG Factory. Gropius was given an opportunity to demonstrate the objectives of Modern architecture, and he announced his programme in the building long before founding the Bauhaus. Its basic principles were total functionalism, absence of ornamentation, use of modern materials, and rejection of symbolism.

The new, surprising motifs of this building were the rhythm of the front of the main block, the glazing continued round the corner without any mullion or post at the angle, the flat roof, the absence of a cornice, and the horizontal banding of the porch. The characteristic feature of the simply composed three-storey building is its glass façade. It was the first time that factory had been built with non-load-bearing walls. This feature was clearly demonstrated by the absence of supports at the corner of the building. This is the first application of the curtain wall technique, later to become so widespread.

Gropius' next building was the **model factory and office block at the Werkbund Exhibition** held in Cologne in 1914. Here the two staircases were encased in curved glass so that the skeleton and the interior workings were exposed. Some years later, in 1919 Gropius founded the Bauhaus in Weimar, as the architect and director of the unified Crafts School and Art Academy and so became also one of the founders of the Modern Movement.

A more expressionist branch of the Pre-Modern architecture in Germany was represented by **Erich Mendelsohn** (1887-1953). He started working on the **Einsteinturm (Einstein Observatory)** while serving as a soldier in the 1st World War. The sketches for the building were executed with an intense moving line. They fully express the dynamic, powerful, streamlined emotionality of the finished building. Mendelsohn himself wrote about the Observatory: 'We have defined dynamism in architecture as the logical expression of the movement inherent in building materials.' It was not possible to use very much concrete and brick was the primary building material, but this was used so that it looks like reinforced concrete. The basic form of the building is elongated, ship-like, crowned by a tower containing a telescope. The observatory was built for Albert Einstein, who at the time was developing his theory of relativity, for which he needed to be able to make certain astrophysical measurements. Cosmic rays were led through the telescope down into an underground laboratory. All the interior rooms were organized strictly in accordance with scientific

requirements, and do not correspond to the sculpturally moulded forms of the exterior, arranged symmetrically. The entrance is a large monumental configuration. Curved windows are recessed into the corners of the building like portholes. When the Einstein Observatory was actually finished in 1921, it attracted a lot of attention and became the sensation of its time. With its monumental, symbolic nature and with its suggestive form the building symbolizes simply the endless power of the science. Streamlining principles, which were later rediscovered by industrial designers, are clearly visible here.

By 1914 the leading architects of the younger generation had broken with the past and accepted the machine-age in all its implications: new materials, new processes, new forms, and new problems.

The Chicago School

So far as Modern architecture is concerned, in Chicago the greatest number of significant buildings represented a continuous and unbroken development in high-rise building architecture. Chicago grew faster than any other city in the 19th century, and produced a large number of important architects whose work during the 1880s and 1890s is usually known as the Chicago School. Louis Sullivan was the most important of these, but William Le Baron Jenney can be regarded as the father of the Chicago School. Others as Daniel Burnham, John Wellborn Root, Martin Roche and William Holabird made up the next generation of Chicago architects.

In 1871 the centre of Chicago was virtually burnt to the ground. The reconstruction of this area gave several architects the opportunity to use new techniques in maximizing the usage of the limited space in the central area of the city. Various developments, including the invention of the lift by 1850 and piling in the foundation, or the need to concentrate ever larger groups of workers in single functional units and also property speculation turned the cellular buildings into skyscrapers.

James Bogardus (1800-74) was an inventor, who called himself an ‘architect in iron’. In 1848 he was the first in America, who supported the external walls of his **New York cast-iron factory** with pre-fabricated cast iron columns and beams, and filled the space between them with huge windows. It was a new technique, the skeleton building, which really characterized the revolution in high-rise building in Chicago after 1871. The works of Jenney and Adler and Sullivan set the pattern.

The precedents of this structure were the so-called ‘balloon frame’ structures. These were the American characteristic frame structures made of timber. The Land Ordinance, the American Territorial Organizations System codified in 1785, can be also seen as a sample with its determinative quadratic system. Its effect is perceptible also in the system of the streets of the cities and also in the ground plans of the houses.

The development of iron and later steel construction made the rectangular relationship possible between support and beam. The exterior walls were at first of masonry. The comparatively soft earth of Chicago was basically unsuited to heavy buildings. Building the foundation of the massive walls in such earth was a considerable achievement. This led to the usage of piling in the foundation under the frame structures.

Later the external walls were built with pre-fabricated cast-iron columns and beams and the space was filled between them with huge windows. The use of pre-fabricated parts made it possible to erect buildings very quickly. Buildings with skeleton frames tended not to have variations between different storeys. The most obvious feature of the skyscraper is the repetitive pattern made by the floors on the exterior walls. It means that the whole building makes ‘a unit from top to bottom without a single line out of place’ (Sullivan 1896). Since the first skyscraper was put up, the problems of this type of building have stimulated almost all important architects to produce their own solutions.

Henry Hobson Richardson’s **Marshall Field Department Store** in Chicago (1885-87) is the peak of his architecture, but it is no longer extant. It shows the most clearly the connection between Richardson’s Historicism (Eclecticism) and the Chicago School, which developed from the 1870s.

The claim for higher and higher buildings contrasted with the planning in styles and demanded new solutions. Richardson used the historical styles for his buildings according to their constructional rules and proportions and he stuck to these also when erecting this seven-storey high Marshall Field Building. But the historical palaces gave examples only for two, three or maximum four storey high façades. That is why Richardson had drawn levels here together, as they would be only one, to hide away this extremely high façade behind the historical motifs. The semicircular arches grew proportionally with the measure of the building.

The method was new and suitable, but was not useful for bigger buildings than this one. This resulted in the fact that the Chicago School wanted to reject using Historicism in his architecture. With his first steps in rejection from historical forms and motifs Richardson gave examples to Louis Sullivan and later also to Frank Lloyd Wright.

Louis Sullivan's admiration for Richardson was expressed both in words and in the designs of his Auditorium Building, which is heavily influenced by Richardson's Marshall Field Department Store.

The **Auditorium Building** was completed in 1889. It was the greatest building in Chicago of the period and one of the most important building complexes of early American architecture. It marked the beginning of the career of **Louis Henri Sullivan** (1856-1924). He was still working here in successful partnership with his older partner, **Dankmar Adler** (1844-1900). Frank Lloyd Wright, who joined the firm of Adler and Sullivan in 1887, also worked on the Auditorium Building.

The building problem was important and unusual. A large office building, a hotel, and a theatre combined were required. This was therefore one of the first multi-functional cultural centres. In the middle was the theatre with its enormous auditorium, from which the building took its name, although it was not visible on the outside. It had 6000 seats, and was famous for its acoustics. The hotel part is wrapped round two sides of the theatre.

The bottom part of the exterior of the building is made in the style of Richardson, of rough-curved natural stone. Above this there are two further storeys in natural stone, and then come four storeys linked by a row of arches and pillars. This arcade and the tower, where Sullivan had his office for years, are the two characteristic features of the building. The windows on the next two floors are similarly linked in pairs, but the windows on the top storey are grouped in threes and are separated by a cornice.

As Richardson's Marshall Field Building, this façade also looks from a distance like a four-storey high historical palace. Also the theorist T. E. Tallmadge called it 'our Palazzo Vecchio'. The rounded arches are in the Neo-Romanesque style, they had already been used in Chicago in 1884 on S. S. Benam's Fine Arts Building. But it was Richardson, who really introduced this type of façade and the Neo-Romanesque style to America on his recently completed Marshall Field Department Store.

With the Auditorium Building Adler and Sullivan introduced a new conception of Modern architecture. Although the details are still historicist, their rational functionalism and revolutionary organization of rooms on the inside are entirely dictated by the needs of modern life.

In 1879, **William Le Baron Jenney** built the first Leiter Building, using pure skeleton building techniques, with cast iron columns as supports inside. Jenney was six years older than Richardson, and educated, like him, in Paris, though not at the Ecole des Beaux Arts but as an engineer at the Ecole Polytechnique. Jenney finally proved at this first building the practicability of this new technique with which architects had been experimenting since the middle of the 19th century.

Another of his buildings, the Home Insurance Building, was held by the architectural theorist, Sigfried Giedion to have been the first real skyscraper. It was built between 1883 and 85 using iron frame inside and on the façade but that was surrounded by masonry walls. The building was demolished in 1929.

In 1889, Jenney built the enormous **second Leiter Building** in Chicago, which is still used as a department store by Sears Roebuck. The eight-storey building can be compared with Richardson's earlier Marshall Field Building and with Adler and Sullivan's Auditorium Building. In comparison, both buildings look old-fashioned and their affinities with historical palaces stand

out. Jenney virtually disregarded problems of form and concentrated on function. The form was only the result of functional requirements and structural techniques. The proportions of the building are not in fact simply chance-effects. It is still basically historicist and traditional, as it is demonstrated by the barely noticeable three-storey pillars and their capitals. The cast iron pillars of the façade were to be made fireproof by solid wall covering. On the inside, the high-ceilinged rooms are subdivided only by thin supporting pillars.

With his revolutionary skeleton building techniques, Jenney influenced the whole Chicago School. Most of the next generation of Chicago architects passed through his office, and he directly influenced Louis H. Sullivan, Daniel Burnham, John Wellborn Root, Martin Roche and William Holabird. He can be regarded as the father of the Chicago School.

Daniel Burnham (1846-1912) and **John Wellborn Root** (1850-1891), who had worked in Jenney's office, played a significant role in the development of skeleton building. They designed an equally important building in Chicago using the traditional structural technique of load bearing walls – the **Monadnock Block** (originally called the Monadnock and Kearsarge Building). It is situated on a corner, and is an office block with sixteen storeys, made of brick, the last high-rise building with this technique. The first design and discussion with the client took place in 1885, but the building was finished in 1891.

The architects made the walls curve slightly outwards at ground floor level, as is now fashionable again with quite different materials. The sculptural form of the building, its moulded foot, roof and corners and its sensitively formed bow windows, are features, which give its special quality. The total lack of ornament allows the sculptural composition of the building to stand out. The design and lack of ornament are undoubtedly the responsibility of Root. The building was no doubt expensive because of the thickness of the masonry walls on the lower storeys. But this building marks the end of the phase of architecture based on the principle of the load bearing wall.

Burnham and Root also designed their masterpiece in Chicago, finished only after Root's death, it was the **Reliance Building**. It was built at first in 1890 only with five levels, but 5 years later completed to 15 levels high. Glass windows and terracotta surfaces dominated on the façade contrasted with the cast iron structure inside.

Louis Sullivan and Dankmar Adler had completed the Auditorium Building in 1889, a cultural centre for the rapidly growing new city of Chicago. Sullivan also built some high-rise buildings in Buffalo (Guaranty Building, 1894) and St. Louis, which represented a new approach to the large office block. After the Chicago World's Fair in 1893, and the financial crisis, which followed it, Sullivan's partnership with Adler broke up, and from 1895 onwards he was on his own. From then on, Sullivan was given very few commissions, and in 1924 he died in great poverty.

One commission he got during this period, however, resulted in his most important building, the **Carson, Pirie and Scott Department Store** in Chicago. It is the culmination of the Chicago School. Here Sullivan found an architectural expression for the steel skeleton. It was completed in 1901, and originally carried the name of Schlesinger and Meyer. It is still a very impressive building, and continues to perform the function for which the architect originally designed it.

The building is situated on one of the main crossroads in Chicago, only a few yards from the Reliance Building by Burnham and Root, and Sullivan's own Auditorium Building. The site was chosen by the client for its suitability as a store. The corner site is very cleverly used by making the corner of the building round and placing the main entrance there. This round part, with its strong vertical accents, is clearly distinguished from the two wings, and forms a kind of tower, as requested by the client. The building was originally intended to have nine storeys and three wings. The ground floor had to be surrounded with shop windows and with the mezzanine floor it forms a base for the building above, with a rich ornamental bronze surface. On the top of this base nine identical storeys are added. The original plan was increased with six more storeys, all with the same beautiful three-part Chicago windows, made possible by the skeleton technique. The top storey was originally kept rather lower than the other storeys. It meant that it formed an end treatment to the remaining functional storeys and base, and all combined into a single composition. Sullivan also designed the interior rooms, which are subdivided only by slim

supports. The original furniture and the lamps show the unmistakable touch of a superb designer.

This original organic character has since been disturbed. In 1906, while Sullivan was still alive, Burnham and Co. were commissioned to extend the building with five further units, in Sullivan's style. They also extended the building upwards, and the top storey was brought back into line with the remaining storeys. In this skyscraper Sullivan reached complete independence of the past. The grid of mullions and sills carried through all floors except the bottom and top ones is the establishment of a system valid to this day.

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Contents