THE WORKS OF KARL SIEGFRIED DÖHRING, ARCHITECT

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INTRODUCTION

During the reign of King rama V (1868-1910), it was the period of great development in Siam. The country started changing its traditional society into a modernized country. Following the king's policy of development, a great number of European professionals and experts were employed to conduct abundant construction projects throughout the country.

Among those professionals, a German architect, KARL Siegfried DÖHRING was employed by the Royal Railway Department in 1960 to execute the brand new Bangkok Railway Station. Later, with his competence, he received commissions from the king to build for his majesty some royal residences. In his 7 years of service to the king (1906-1913). DÖHRING at least designed 3 palaces. These are the Royal palace of Ramrajnivej (Wang Ban-Puen) in the city of Petchburi, Bangkhunprom palace (now the head quarter of the Bank of Thailand) and Varadis palace, both of the latter are in Bangkok. These palaces are now listed as national monuments. DÖHRING'S buildings are quite different from their contemporary classicism oriented palaces in Bangkok. They obviously reveal the progressive idea of the early 20th century's architectural design which comprises "ART NOUVEAU" movement, "ARTS & CRAFTS" movement, and steel-framed structure. However, his excellent designs have never been recieved a proper appraisal.

Besides his superior quality of architectural desing, he was also a great researcher in Thai architecture. DÖHRING spent several years patiently gathering information of many temples around Bangkok and Petchburi which finally became a valuable book, "BUDDHISTISCHE TEMPELANLAGEN IN SIAM", published in Berlin in 1920. I believe that this book is the best text on Thai architecture ever written by foreigners. The book was in fact composed of two doctorate dissertations presented earlier by Döhring for University of Dresden and Erlangen in 1911 and 1914 respectively. However, it it a pity that this book is also least known among Thai scholars and the name of KARL S. DÖHRING is not well known either.

I have been interested in DÖHRING since 1985 when I had an opportunity to restore a distinctive former palace (The Ramrajnivej) designed by him. Later I found his other 2 palaces in Bangkok and surprisingly his excellent text books on Siamese Temples. After considering all performance of DÖHRING as both a competent architect and a scholar. It is necessary for me to bring him out of the dark side of the Thai's architectural history.

The aims of this study are to make a proper evaluation on DÖHRING's architecture and to make it better known as an important evidence of the transition period of Thai architectural history. To have a good understanding in DÖHRING's architecture, it is necessary to know the influences which constituted his idea. For the reason that DÖHRING's architecture are originated from Germany, therefore the study has been conducted in Germany in order to find out the original sources and inspirations which influenced his designs. Consequently the study explains his ability in synthesizing those inspirations into his own creations. Finally a short biography of DÖHRING is also searched out.

It is very fortunate that this research was sponsored by the DEUTSCHER AKADEMISCHER AUSTAUSCHDIENST (DAAD) during my two months of field study in Germany. The RHEINISCH-WESTFALISCHE TECHNISCHE HOCHSCHULE, AACHEN by Professor. Dr.M.JANSEN gave me a kind invitation to conduct the research in his institute in 1993 as well as gave me valueable comments and hospitality during my stay. I am also in debt to Mr.FRANK DUMUR, a 72 years old Swiss gentleman, a nephew of DÖHRING who kindly let me know private information of his uncle. I would like to express my sincere gratitude to above mentioned persons and institutes. Without their valueable help this research will not come true.

This research compries many stories of several periods which needs a long explanation. However I wish only to write a concise essay, therefore the researeh is written rather briefly. Some indirectly concerned texts are fully explained in the notes attached to the text. The research is simply arranged according to the life sequence of DöHRING. It consists of five important sections, the early life; coming to Siam, the three palaces, the main influences and the elderly life as the final section.

With the limitation of time, finance and knowledge, this research inevitably needs further development. There are some obscure matters to be searched out which I wish to have another opportunity to continue in the very near future.

Finally I hope, besides widening the realm of architectural knowledge, this research will increase the better and closer relationship between people of the two countries, Thailand and Germany.

1. THE EARLY LIFE

Karl Siegfried Döhring (the name will be written KSD for the rest of the text) a son of a postal clerk, was born on the 14th of August 1879 in Köln Germany. The city which skyline was dominated by spires and towers of Romanesque churches and streets were full of buildings with various historic facades. Germany in the late 19th century was a leading industrialized country of Europe with rapidly increasing population which resulted in numerous large constructions. The advanced technology also provided the superior quality materials ever existed, steel and reinforced concrete. On the other hand architectural style was still persisted in the charactors of buildings of the past ranging from Classicism, Romanesque to Gothic. Consequently new buildings were a composition between steel and concrete strucure produced by advanced technology and old fashion facades motivated by nationalism, religious faith and academic taste. Ill.1

KSD had his early study in Köln then moved to Neustetin with his parents where he finished his secondary school in March 1899. In the Easter of 1899 he enrolled the faculty of Architecture.[1] Koniglichen Technische Hochschule, Berlin-Charottenburg[2] which later significantly Ill.. marked his future career as an architect to the royal court of Siam.

The influence of the study years in KTH, Berlin-Charlottenburg should not be underestimated. This one of the most outstanding Technische Hochschule of Germany provided the most compre-

hensive and advanced knowledges for its students. The course in architecture[3] comprised both contents in aesthetics & technology. Students had to study all sapects in engineering as well as all architectural styles ranging from Classicism to Gothic. The influenced teaching staff included famous Berlin architects such as J. Raschdorff the designer of Berlin Cathedral and Otto Schmalz, the architect of the District court of Berlin. Both were leading architects of the mainstream style of the period, Eclecticism. On the other hand the newest and most progressive movement emerged around 1896, the "Jugendstil"[4] could not penetrate into the academic cirriculum. It seems that young KSD did not only gain his knowledge from the KTH but he also studied History of Arts, Archaeology and Philosophy at the Universität Berlin along side with his architectural training. His ability in stepping forward the academic rules of historicism to the innovative Jugendstil perhaps partly resulted from this multidisciplinary studies which also gave him a firm basis to persuit his extensive research in Buddhism temples architecture in Siam. Ill.3

2. COMING TO SIAM

In May 1906, just several months after graduation from KTH Berlin, by the persuation of his classmate E. Dorrow, KSD came to Siam with his wife Margarethe Erbguth to take a position of assistant engineer to the Royal Railway Department of Siam.[5] The kingdom of Siam during the reign of Rama V (1868-1910) was in the period of great development. The king started his policy to modernize the country following the standard of the "civilized" world in Europe. The Royal Railway Department commanded by a team of German experts, set up a network of railway as to establish a modern transportation throughout the country. KSD was one of those European professionals employed by Rama V [6]to execute the brand new Bangkok Haupt Bahnhof at Hau-Lampong.

His activity between 1906-1909 was not clearly defined. It was not until September 1909 that he had an opportunity to show his conpetence in architectural design when the king gave him a commission to design a vacational palace in the city of Petchburi, a provincial town 125 Km. south of Bangkok. Almost at the same time he was also granted 2 other commissions to design palaces for Prince Nakornsawan,[7] a son of the king and the Ministry of Defence and also for Prince Damrongrajanupap[8] a younger brother of the king and the Ministry of Interior. All these distinctive buildings are deviated from the main stream of Historicism to the freer expression of Jugendstil which can not find in any other contemporary buildings in Siam. KSD also wrote an extensive and systematical research in Buddhism architecture in Siam especially the stupas and the chapels which was published later in 1912 and 1914 respectively. These two Doctoral dissertations were combined to produce a complete edition entitled "Buddhistische Tempelanlagen in Siam" published in Berlin in 1920, the earliest and the best text on Thai architecture ever written by foreigners.

3. THE THREE PALACES

3.1 Pra Ramrajnivet Palace (Wang Ban Puen)

This vacational palace was started its construction in 1910 the last year of the reign of Rama V and only finished in 1918 in the reign of the successive king, Rama VI. KSD was the supervisor to the construction until his departure in 1913.

The particular plan of this palace is the Rhenish Romanesque trefoil plan with an enclosed cloister which results the treatment of mass and form following the massive appearance of Romanesque churches. However no strict classical rule is followed on the facades design. Each facade composes of simplified baroque details and the composition of architectureal elements is freely created to have an asymmetrical balance. Ill.4,5

The organization of rooms inside is based on functional relationship rather than on the facades appearance. The decoration is obviously a mixture of simple baroque and rectilinear Jugendstil. Jugendstil strongly reveals in the use of colourful glazed ceramic tiles on the walls. Decoration and lighting fixtures are mainly of geometrical patterns with various types of materials ranging from cast-iron to brass and stained glass. Floral figures in impressionism paintings are also appeared.

The most dramatic space articulation is at the trefoil east end where the main stair hall is situated. Functional requirement need a two storey hall which would had resulted the hall low and dark. But on the aesthetical point of view a spacious hall was necessary. In order to achieve both requirement, KSD employed two methods to create an interconnected space between the two floors. Firstly he used the Baroque trick by inserting a twin semicircular stair at the lower lobes of the trefoil. Each open lobe has one stair leading to the grand lobby above. Secondly he directly provided an open void at the centre of the grand hall floor. The void enabled the space flowing from the ground floor through the second floor reaching the domical cieling at the top. This kind of Jugendstil space design was found for the first time here in Siam.

Advanced contruction technology is shown in the use of structural steel for the roof truss as well as the reinforced concrete structure for the foundation and cieling vault.

This palace building with the appearance on the border line between historicism and Jugendstil shows its significance not only on its architectural style of the facades but also the spatial articulation inside as well as the advanced construction technology of the building.

3.2 TAMNAK SOMDEJ [9]

This palace was built on the command of the Minister of Defence, Prince Nakornsawan for his mother Queen Sukumalmarasri[10] in 1913. Its vernacular appearance is shown in the massive form with a huge and high mansard roof and a round apse at a facade. The long striped opening on this apse providing light for the main stair recalls the similar manner of "Haus Keller" in Darmstadt Kunstler Kolony designed by J.M.Olbrich in 1901. Generally the exterior is very clean only floral stucco in geometrical bands decorated above the opening with a shaped gable on the south side roof recalling the more elaborated ones in Wang Ban Puen.

Organization of rooms is loose and few rooms are really partitioned, consequently the feeling of space flowing is appreciated. The most impressive space is around the main stair hall where the semi-circular wall rises up to the upper floor without interuption of floor. Then an interconnected space between the two floors is created with the semi-circular stair as the linking media. This kind of spatial inter-relation was well known among the Jugendstil architects and often appeared at the living room with the main stair. However KSD retained his identification by never combining stair hall with the living room. Rooms are made charm by decorated wood carving in either patterns of the fluid line of flowers and leaves or simple geometrical line. This decoration is only matched with the huge impressionism fresco above the stair hall.

The appearance of the whole house doesn't represent any particular style of architecture of the past as the architect probably intended to made the house looked "vernacular" as it is considered an advanced concept of that period.

3.3 WANG VARADIS

In 1911 Prince Damrongrajanupap a younger brother of King Rama V and the Minister of the Interior requested KSD to build him a house that could be a model of the modren living of Europeans in the early 20th century. This house with its rather massive proportion and a huge mansard roof reveals the German vernacular characteristic. The arrangement of solid and void on the facades is quite fascinating particularly the grouping of contrast shape of window within the same facade noticeably arch windows and rectangular windows. These strange facades reflect the different functions within the house. Mouldings are also added to enrich the building appearance particularly those leaves on the pilasters and woman figures with ears of corn of rice on the back facade recalling preference to the Jugendstil movement.

The arrangement of rooms isasymmetrical and based on functional basis. The most important space (The Chinese Room) is located on the central part of the house and surrounded by other less important rooms. Flowing of space can be experienced in this house too but in a lesser degree than the quality of Tamnak Somdej. Long projection of roof, direct ventilation and natural light are the design to meet the requirement for hot and humid weather of Siam. The high quality of this house is clearly represented the personality and taste of the architect as well as his interpretation of European modern design theory fit into a real situation in Siam.

4. THE MAIN INFLUENCES

4.1 HISTORICISM

4.1.1 ECLECTICISM AND MONUMENTALISM

Historicism in architectural design had been well established in Berlin for more than a ceutury before the end of 20th ceutury. It included all sort of the previous characteristic of architecture in the past particularly Classicism and Gothic. Karl F.Schinkel[11] the most influence German architect of the 19th century as a professor of the Koniglische Techniche Hochshule Berlin and the superintending architect of Prussia, had set up a firm classical foundation for the architectural design. Schinkel's influence still remained in the late 19th century as one could see eclecticism architecture produced by famous professors of KTH. Berlin. The distinctive buildings among those works included the New Cathedral of Berlin by Professor Julius Rachdorff and the District court of Berlin by Professor Otto Schmalz. No doubt that after six years under the teaching of these two professors, Historicism was inevitably the foundamental spirit of KSD creativity which can be traced in his orderly and systematic design.

4.1.2 ROMANESQUE

Despite of a feature of Historicism hardly used by other architects KSD effectively applied a Rhenish Romanesque church plan, the trefoil with a cloister for the plan of Wang BanPuen Palace which is so similar to the plan of the St. Apostles[12] of Köln. His treatment on the building's form and proportion is also distinctively Romanesque Ill.4,5

influence. Romanesque is perhaps KSD's personal
III.6 choice which is related to his birth place. The city of Köln where once occupied the greatest number of Romanesque churches in Europe.

4.1.3 BAROQUE ARCHITECTURE

KSD's ability in spatial articulation, treatment of facades and organization of building forms shows the influence of earlier period architecture and architects particularly the works of Baltharsar Neumann.[13]

His spatial design in the stair hall of Wang Ban Puen, Petchburi recalled to a particular building of B. Neumann, the Schloss Bruchsal. In Bruchsal,
III.16,17 Neumann designed the grand twin stairs climbing up around the wall of a cylinder to meet the grand round hall capped by a huge dome decorated by fasinated mural painting. Similary, in Wang Ban Puen KSD
III.18 also designed a twin stair stepping up around the round walls of the two-lobe plan. Approching along this semi-circular stair the space above is gradually
III.19 appeared. The whole room with the huge domical cieling is fully seen when the visitors reach the first floor. The open and vast atmosphere up there is dramatically contrast with the tight space of the stair below.

III.20,21 KSD's treatment of building form in Wang Ban Puen is also interesting. He designed a central domical roof with two small segmental vaults cap-
III.7 ping the trefoil east end. This group of domical roof is immediatly connected to the flat wall of the nave's facade therefore the entire building seems to be seperated into two parts distinguished by different roof form. This kind of contrast composition is quite different from the harmony roof form of actual Romanesque buildings with a trefoil plan. On the other hand "form contrast design" can be also
III.8 found on B. Neumann's Schonborn Chapel (1721-1736) in Wurzburg where the architect had to add a new chapel to the front of the old Würzburg Cathedral. The original building of Folkwang Museum in Hagen by C. Gerade (1897) had a round plan corner capped by a domical roof connecting to a flat wall of the rest part of the building is perhaps another comparison.

The arrangement of solid and void on the south facade of Wang Ban Puen shows a formal alignment. KSD designed a central portico franked by two wings with repetitive rhythm of rectangular windows. The portico is emphasized by a prominent shaped gable on the top which is similar to the west
III.12 side's main gable with a slightly curved wall. This vocaburary is commonly used in Baroque peroid, Egid Asam's shaped gable of the Church of Saint
III.13 John Nepomuk[14] (1733-40) in München is well known for the curved walling designed both inside and outside the buildings for the illusive optical effect.

4.2 THE JUGENDSTIL MOVEMENT

The 19th century sees the rapid industrial development in Germany as well as a striving for national identity. In architecture many architectural styles of the past were brought to represent the identity of the nation. It ended up with a rather unsatisfactory result, the Eclecticism which can only represent confusion in taste and history.

Jugendstil responsed the need of a new kind architecture which represented its own age, fit to the industrial production at the same time awaring of local craftmanship and natural aesthetics. The movement pervaded its influence in Germany between 1895-1910, the period which KSD studied architecture in the Koniglische Technische Hochschule-Berlin and working in Siam.

There is no evidence showing any direct relationship between KSD and the Jugendstil architects but he might concieve some inspiration from this new concept during his student years in 1899-1905 particularly from those who performed their works in Berlin such as Henry Van de Velde, Joseph Maria Olbrich, Hermann Muthesius, August Endell and even Alfred Messel.

Some particular features of KSD palace in Siam reveal his acceptance for Jugendstil and relating to the works of some architects that should be mentioned.

4.2.1 HENRY VAN DE VELDE (1863-1957)

a Belgian architect, first exhibited his new idea of interior design in Dresden in 1897. The approval on his exhibition brought about a number of commissions later. The interior design of Havana company cigar shop in 1899-1900 was his first commission in Berlin. In this shop he arranged his distinctive curvilinear motif wherever III.32 possible regardless the function of the objects and convenience of the users. His curvilinear design soon became his identity of this period

In 1897 he was invited by Karl Ernst Osthaus to design the interior of the newly III.9 built Folkwang Museum in Hagen designed by a Berlin architect Carl Gerard. Besides his fluid lines decoration everywhere, the central space of the first floor hall is emphasized by a round shape opening on the floor above thus space between two floors is interconnected. This distinctive kind of spatial III.10 organization can only found in the main stair hall III.11 of Wang Ban Puen Palace where the same method was used to signify the central space of the hall. Fluid line patterns revealing in KSD interior design noticeably the door ways of Tamnak Somdej also III.33 proved the considerable influence of "Van de Velde style" on his architecture.

4.2.2 JOSEPH MARIA OLBRICH (1867-1908) an Austrian architect from Vienna was invited by Ernst Ludwig the Grand Duke of Hesse in September 1899 to design and establish an artists' colony[15] on the Mathildenhohe hill in Darmstadt. In 1897-98 Olbrich made his international reputation by his new style building of Vienna Secession Building which appears in a constant geometrical form with classical references. His seven houses in Darmstadt clearly expressed the German-Vernacular characteristic on the outside. At the interior interconnected spatial organization is shown at those double floor heigh living rooms with the staircase leading to the upperfloor. Decoration is characterized in the fluid lines of flower motifs as well as geometrical shape lighting fixures. Olbrich's architectural style was very much in favor among young German architects even it was called "Darmstadtstil" which still last for years after his sudden death in 1908.

The "Olbrich's style" can be traced in KDS's buildings in Siam particularly the heavy proportion house with a projected apse of Tamnak Ill.30.31 Somdej reminds one to the Keller Haus in Darmstadt. Not only the similarity on the appearance but also the function of the apse as the stair well for the house should be noticed. Furthermore the geometrical Ill.25,26 lighting fixures of Wang Ban Puen assure ones the influence of the original models appeared in the Gluckert Haus. The round shape pavilions near Tamnak Somdej and the ones at the Darmstadt artists' colony is another matching to be noticed. Another house in Darmstadt Artists' Colony should be mentioned is the Haus Behrens designed by Peter Behrens.[16] Here Behrens effectively emphasized the door way and corner pilasters with the strips of deep Ill.27,28 green glazed tiles. The same trick of surface treatment one can observe in Wang Ban Puen at its deep green columns of the stair hall designed by KSD.

4.2.3 HERMANN MUTHESIUS (1861-1927) spent 7 years in England to study and record English architecture. His most important book "Das Englische Haus" published in 1903 introduced Germans to admire the English "natural house.[17]" He praised English country hous as "simplicity of feeling, structural suitability, natural forms instead of adaptations from the architecture of the past, rational and practical design, agreeable shaped rooms, the use of colour and the harmonious effect that had in former times resulted spontaneously from an organic development based on local conditions." His documents made the admiration of vernacular architecture spread throughout Germany. Muthesius himself designed a number of private residences in Ill.36 such manner particularly his own house in Nikolasse, Berlin (1907) shows his success in escaping from classical rules of design to functional basis design. This appears on the use of various types and shapes of windows and doors for different purposes especially arch windows and rectangular windows which indicate the different function of the rooms inside. KSD perhaps used the same rule to design Wang Ill.37 Varadis which results its appearance matched to the Haus Nikolasse in Berlin.

Muthesius another house in Berlin, the Ill.34 Haus Neuhaus (1906-1907) showed his masterful ability in spatial organization. The most important room of the house, the cetral hall with a double storey high cieling and many windows located the main stair leading to the upper hall, gave the visitors a feeling of spaciousness and light within an actual small room size. This kind of feeling can be also appreciated in the main hall of Tamnak Somdej but Ill.35 here KSD created some differences by using a semicircular staircase leading up to the open lobby above where a colourful impressionism painting of 6 cheerful young girls picking flowers in a garden decorates the cieling. This makes the atmosphere of the hall even more delightful than Muthesius' plain hall in his Berlin Haus Neuhaus.

4.2.4 COMTEMPORARY BERLINERS ARCHITECTS

Between the two groups of conservative Historicism and the progressive Jugendstil, there was another group of Berlin architects whose works could not easily be classified but their influence was inargueably accepted namely Alfred Messel and Oskar Kaufmann. Messel's Wertheim store (1896) in Ill.14 Berlin expressed a kind of simplified Historicism at the same time modern material such as plate glasses and steels were used in the historic-adaptive facades. Messel's another design with less progressive and simpler facades was shown in the Verwaltungs Gebaude der A.E.G. (1907) which revealed Messel's foundamental respect in the classical rule.

Oskar Kaufmann designed the Hebbel Theatre (1900) in Berlin appearing the simplified Historicism with the very modern interior decoration. On the other hand the curved front facade revealed the existence of the Baroque influence. Generally in the turning point between the 19th and the 20th century, Berlin remained the important centre of Historicism architecture primarily because of its long lasting and deeply rooted classical tradition. The influence was so strong enough to be traced out in most of Berlin architects works even KSD, being so far away from Germany still designed buildings with emphasizing the vertical alignment of columns at a regular interval as seen in the Wang Ban Puen Palace although the interior was dominated by a much progressive Jugendstil idea.

4.3 ADVANCED BUILDING TECHNOLOGY

Although reinforced concrete and steel structure had been used very long before 1900. They were both just introduced to Siam around 1900 and only used for major construction projects for example Prathinang Anantasamakom Palace in Bangkok was entirely built by reingorced concrete structure. The use of steel was even much limited, mostly used in the engineering field such as bridges and railways. Only two buildings in Siam had steel roof framing, the Haupt Banhof of Bangkok and the Wang Ban Puen in Petchburi. Both buildings were built in the first decade of the twentieth century and responsible by German architects and engineers.

The selection for reinforced concrete structure for Wang Ban Puen palace perhaps came from the requirement of structural durability and design advantages. Concrete structure enabled the architect to create much more new building forms hardly achieved by traditional materials for example the round tunel vault and large domical cieling including large opening on hanging floor. All these appearances made up a particular form of spatial organization never existed in traditional design structures. Only steel frame structures provided a possibility of covering over the roof of 22 metres wide span with complex connections of roof planes.

Thus reinforced concrete combined with steel frame roofing permitted the complicate image of the palace to be achieved. KSD. didn't only understand the new idea of building "style" but he also realised the technological factor that supporting and influencing the style and knew how to handle it.

4.4 PERSONAL CREATIVITY

Although there are some factors influencing KSD designs as descriped, his personal creativity is the most important factor in the forming of his architecture. KSD's buildings are in fact very individualistic creation and can hardly be compared with any other buildings in Europe. Although the influence of mastepiece buildings and master architects in Europe is persisted, it is only a basic impression which he individually transformed into his architecture. In his buildings one can't find the weak fluid wave of Van de Veld in the decoration and neither Olbrich's rectilinear was found. The appearance of Wang Ban Puen is very far from buildings by any Berlin architects. KSD was very far from a copy designer or a standard type architect. On the other hand there are many features in his buildings indicated his exceptional creativity.

KSD first invention is the cieling space above the grand stair hall of Wang Ban Puen. Here on the trefoil plan hè put a domical vault on the central lobe which is partially surrounded by a curved flat vault cieling forming by the other two lobes of the trefoil. This kind of cieling space can never be found in any trefoil plan buildings in the past and perhaps is a progressive space design in such plan. Ill.21

Originally the trefoil plan is widely used in the Rhenish Romanesque Churches in Germany. Ill.22 Traditionally in the 12th century churches, the cieling space above each lobe is formed by a quarter spherical vault. Then the trefoil surrounds the central space of Ill.23 the crossing where a domical vault is capped. Balthasar Neumann was the one who developed this space design further in the 18th century. In his trefoil within the latin cross plan of the Wallfahrtskirche of Vierzehnheiligen (1744) he made the space more dramatic by creating a flat Ill.24 domical vault over the central lobe and a quarter spherical vault at each side lobe. The crossing, instead of capping by a dome is covered by a flat vault created by the meeting of the four curved surfaces of the domical cieling. Consequently, Neumann is able to shift the principal space away from the crossing. This creation was followed by other architects for centuries. On the other hand Ill.21 KSD space design for the cieling of Wang Ban Puen is a further creation. The trefoil plan of Wang Ban Puen is characteristically different from the original Rhenish Romanesque's trefoil plan. The Rhenish trefoil plan is conformable to the cross shaped plan whereas the cross shape can not be formed within the trefoil plan of Wang Ban Puen because its three lobes are arranged in a very compact manner. Consequently the traditionally principal space at the crossing is unapplicable for this plan. In designing the principal space of this plan, KSD shifted the principal space to the central lobe by putting a domical cieling on its top in order to emphasize its principality. At the same time a central void at the upper floor is provided to achieve a through connection of space from the ground floor to the domical cieling. Then the cieling of the two side lobes of the trefoil plan is combined to create a curved flat vault partially surrounding the dome which creates a feeling of movement around the dome. This spatial design is fundamentally the same principle as Nuemann's which aims at moving the principal space from the crossing to elsewhere needed by the architect.

KSD's building form design of the Wang Ban Puen palace is equally as dramatic as his space design. The use of domical roof form on the trefoil lobe created a difficulty to be harmony with the rectangular plan of the rest of the building. The building mass is consequently seperated into two parts following the roof form, the domical roof and the mansard roof. In order to create a visual balance, KSD seperated the building into 3 parts, the east end with domical roof, the central part and the west

end. He covered the central part by the highest mansard roof with a small tower and a prominent shape gable portico to secure its domination while capped the west end by a two stepped mansard roof. Consequently by this scaled division, the roof of the central part is not too heavy to break the fine scale of the building. At the same time the two smaller roofs of the east and west end despite of the different roof form, are able to equalize the visual effect of each other. Certainly this design trick is very individualistic and can never be found or even be created in Europe.

Let's discuss further on the stepped roofing which is a basic feature appeared in Thai architecture for several hundred years. One objective of this design is to relieve the psychological feeling of heaviness of the building roof by adding one or two smaller roofs in front of the central roof of the building therefore a gradual changing of the roof size is appreciated. KSD's deep admiration on Thai architecture is inargueably shown in his exhaustive research in Thai Buddhism temples architecture complied during his six years staying in Siam. We can't find any of his documents refering to the application of the traditional Siamese temple design in his modern architecture in Siam. On the other hand the use of stepped roof in Wang Ban Puen Palace is
Ill.12 definitely not an accident but is so transparantly revealed his profound understanding in Siamese architecture and at the same time his creativity partially haunted by the spirit of Siamese design.

5. THE ELDERLY LIFE

KSD personal life is contrast to his work, rather a bitter story and largely remained unknown. His first tragedy was the sudden passing away of Margarethe Erbguth his young wife of cholora in Bangkok in 1911. The tragedy resulted in his first absence to Germany for one full year between June 1911 to June 1912. During this period in Germany KSD presented his first research in Siamese temples architecture entitled "Das Phrachedi in Siam" to the faculties of the Koniglische Technshe Universität of Dresen which granted him the Doctor of Ingenieur in July 1911.

KSD returned to Siam with his second wife Kathe Jarosch in June 1912 to continue his supervision on the construction of the three palaces he had designed before leaving. During this time he might also prepare a master plan for a new university in Bangkok to the Siamese Government but it was never followed. At the same time he also continued his research in Siamese temples. This hard work brought about his second tragedy which totally changed all his life. KSD was very ill of nervous and mental troubles in 1913 during having a very bad financial stutus. Fortunately King Rame VI[18] subsidized him to have a proper remedy back home in September 1913 just before the out break of the first world war. KSD never knew before that this was his last opportunity to see Siam as he mentioned later that he always determined to come back to Siam as a cultural attache to the German Embassy in Siam. Ill.25,26

Shortly after going back home, he recovered from the illness at the time that the first world war exploded. During the war KSD served the Prussian army as a Probationary Officer with the Balloon Battallion. He was decorated the Iron Cross Class 2. KSD was in fact very fortunate to have the chance to return home before the war because Siam as a country in the allies declared war against Germany which resulted a number of German experts in Siam to be detained and later exiled. Some of them even did not have their lives to come home. KSD never gave up his hope to come back to Siam but could only wait for the settled down politics. During the mean time he finished his second thesis on the Siamese architecture entitled "DER BOT in den Siamesischen Tempelanlagen "presented to the faculty of Philosophy University of Erlangen in February 1914. A degree of Doctor of Philosophy (magna cum laude) was given to him for the quality of this document. However, KSD was not so successful in his second marriage resulting in his divorce to Kathe Jarosch in September 1919 which he stated his innocence in his personal lebanslauf. KSD continued deeper concentration in study which made up his third doctoral degree in 1920, Doctor of Law from the University Of Greifswald. Probably at this time he realized that his hope to come back to Siam would never come true as no sign of response from both the Siamese and Prussian government to call him for any post in Bangkok.

After his return from Siam KSD had never done any architectural work on the other hand he gradually involved himself in writing text books on Siamese and Indian studies. His 16 important publications on this subject were made during 1920-27 namely, the Buddhistische Tempelanlagen in Siam, Berlin 1920, the Kunst and Kunstgewurbe in Siam, Leipzig 1921. KSD was granted a title of honourable professor for his knowledge on Siamese and Indian studies as well as his merit for the assistance in the creation of the East-Asian Arts section in the Museum of Ethnology, Berlin-Dahlem. He never taught at any University.

The period from 1927-1934 sees another change in his life KSD stopped writing text books and became a police-story translator.[19] He translated more than 64 books of Edgar Wallace into German. However his last pulication in 1937 "Flucht aus Buddhas Gesetz" seemed to indicate his interest in Buddhism philosophy. At the very late of his life

KSD moved to Darmstadt, the city which its architecture once had much influence on his design in Siam. He died quietly in Darmstadt in 1941. His body was cremated and buried in the Waldfrihof of Darmstadt until 1988 when the authority dug out his
III.38 nobody response grave and his ash was dismissed. Despite three marriages, KSD had no descendant which resulted a rather unhappy ending, an old man with lonesome dead and even unknown life.

Some parts of his life scene still remains vague especially for what reasons that he suddenly stopped his profession as an architect after having been so successful in Siam.

The period of his second return to Germany in 1913 was actually the very decline period of the Jugendstil which was totally different from the situation in 1906 when he firstly departed for Siam, Jugendstil reached its zenith. The new coming movement on the second decade of 1900 "the Modern Movement" was calling for architecture fit to industrial production as well as to standardization and soon conquering all architectural domain. Perhaps this new trend of abstract architecture was not matched with KSD interest which probably resulted in his discontinuance in the profession.

KSD's birth and growing up period between the late of 19th century to the beginning of 20th century is only matched to the birth and death of the Jugendstil movement, a rather short life movement but historically significance. KSD's architecture in Siam is the excellent representative of the movement as well as of the changing world of the early of 20th century which cannot be found in other places and be reproduced in other periods. However, in fact that his architecture and his research were born much too early for his contemporary people to realise their value therefore resulting them to being waited too long for someone to make them known to the world.

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NOTES NO THE TEXT

1. KSD was registed under the Matrikel number 10788 from 18 April 1899 to 12 September 1901 and under Matrikel number 13884 from 1 October 1901 to 29 August 1905.

2. The Konigliche Technische Hochschule Berlin was originally found as the Bauakademie by King Federick William III on 18 March 1799. At the beginning the purpose of the foundation was to establish a small academy for producing engineers for civil works in the most ecomomic way. However the determination of the teaching staff and students made the continueous progress to the academy with distinction in producing professional builders. The philosophy of the academy from the beginning is that technology and science are the inseperable knowledge. Therefore the technical instruction should have an intellectual basis. Furthermore the school maintained its believe that the development of artistic abilities should go along side with the scientific and theoretical knowledges.

For the study trend, Friedrich Gilly laid down Neo-classicism from the beginning. The trend was continued by K.F. Schinkel, a prominent student of the very eary class who became a professor of the academy in 1820. Richard Lucae the follower of Schinkel's Greek architecture was another influential professor who wrote "Descriptive Geometry" the text book learned by all architects.

A further development was marked in 1879 when the academy was incorporated with the Gewerbakademie and became the Konigliche Technische Hochschule Berlin-Charottenburg. The new Hochschule comprised five major departments, architecture, civil engineering, mechanical engineering-naval architecture, chemistry & metallurgy and Science. The Hochschule reached its heydays as one of the most advanced scientific academy in Prussia before the first World War. Unfortunately, the glory history of the Hochschule did not last long enough to survive from the total destruction by the second World War in 1943. The disaster resulted the Hochschule to be closed down but fortunately enough to re-open in 1964. The new institution found on the ruin of the old Hochschule was re-organized and named the Technische Universität Berlin since 1950.

3. The study programme in architecture in the academic year of 1904 showed that a student had to study 104 courses within 4 years which almost

all of the students were unable to finish in this limited time. The programme covered 21 courses in Engineering, 17 courses in fine arts and 66 courses in architectural designs, construction, urban studies, history and professional practise.

4. Jugendstil. A new concept and style in architecture emerged in Europe between the last decade of the 19th century to the first decade of the twentieth century. The style was called Art Nouveau in France and the 'Modern Style' in England but in the Germanic countries the style was commonly known as 'Jugendstil' which derived from the name of a progressive magazine called 'Jugend' published in München from 1896.

Jugendstil architecture was not a uniform style but it varied from one architect to another and from one region to another. However Jugendstil had a unified concept that it was opposition to the historic imitated architecture which had been continued for more than 400 years since the Renaissance. Conceptually, nature was interested by Jugendstil architects and it was their source of inspiration as well as oriental art, traditional craftmanship and simplicity of vernacular architecture. Physically, Jugendstil architecture was often characterized by curvilinear lines influenced from trees and vegetations. Utilities were the first consideration for the building planning rather than the traditional symmetrical plan.

This modern style was well established in France Belgium and England before disseminated into Germany. The important concept influencing the new generation of German architects was the English "art and craft movement" initiated by William Morris and John Ruskin. C.R. Mackintosh designed the geometric form buildings decorated by rectilinear lines spreading his influence to Austria before J.M. Olbrich of Vienna brought the concept to Germany. Henry Van de Velde the Belgean architect characterized his architecture by fluid curvilinear lines was the last major source of inspiration for German architects. Jugendstil was created mainly on these three important sources with the traditionally deep admiration on classicism which identified German Jugendstil in a style of a rather rigid and geometrical frame with a particular reference of Baroque and Classicim.

Among the three important centres of Jugendstil in Germany namely Munchen, Darmstadt and Berlin, Munchen was the most important where influential architects were native German. August Endell whose works were inspired by nature and strongly expressed in the free pattern of fluid lines. Richard Riemerschmid created his architecture on the functional basis and vernacular oriented whereas Bernhard Pankok exploited curvilinear lines with rigid rectangular to create a Germanic appearance. Jugendstil in Darmstadt was led by J.M. Olbrich and his followers. Olbrich denied eclecticism but accepted Austro-Germanic vernacular architecture. His architecture was a successful combination between the rigid geometrical frames and the tender impressionism paintings.

In Berlin there were more than one group of Jugendstil architects acting. Van de Velde and followers created simple form buildings emphasized by fluid curvilinear lines. On the other hand the group of native German architects led by Alfred Messel and Peter Behrens were still partially influenced by classical designs. Furthermore Hermann Muthesius was the leader on the design based on English vernacular influence.

After the mid of the first decade of the twentieth century Jugendstil was gradually declined which was resulted by imitation of building decoration rather than considering on the profound design concept. Finally the substance of the style was only based on the meaningless curvilinear decorations. In order to refreshing the spirit of creating modern architecture, the pioneers of Jugendstil architects namely Muthesius, Riemerschmid, Behrens, Olbrich, Van de Velde and Pankok set up the Deutscher Werkbund in October 1907. The Werkbund seeked the way to produce high quality of artistic products and handicraft by means of industrial production for obtaining high quality products with non-expensive price. Unfortunately, this attempt to develop the Jugendstil concept did not last long. The contradiction between Muthesius and Van de Velde broke the group. Muthesius supported standardization for industrial designs while Van de Velde saw standardization as a destruction of individuality of artists and works of art.

The year 1914 saw the last period of Jugendstil which substantially showed in the seperated concept amony those leaders. In the exhibition of the werkbund in Köln ons saw the different approch to modern architecture. Josef Hoffmann and Peter Behrens moved back to classical design whereas Van de Velde still grasped the curvilinear line for buildings. The most advanced project appeared in the form of a glass box building by a young German architect Walter Gropius who called his work "the Modern Architecture."

The rapidly progress of massive production of industry in the early twentieth century couldn't couform with the nature and handicraft oriented idea of Jugendstil. It resulted the style to be faded away in the second decade of the century and gave way to the rising sun "Modernism". The Modernists declared the idea of functionalism, non-historic appearance, new technology and materials in architectural design with a step further than Jugendstil on the refusal of any decoration and handicraft on the buildings in order to match with the line of industrial

production. Architecture was finally regarded as a machine for living in for another a half of a century.

5. The railway construction in Siam started as early as 1883 when King Rama V appointed a team of English engineers to survey the northern line. Consequently the Royal Railway Department was found in 1890 to sassume the responsibility in railway transportation throughout the kingdom. Since then German professionals had been significantly involved in the Siamese railway both in administration and technical aspects. At the beginning the construction of railway was executed by an English contractor so that the important duty of German professionals was to give advise to the king for the performance of the English company. Later when the Railway Department executing the constrnction by itself, a group of German engineers performed the important role for this responsibility. At least the first three German Director-General of the Railway should be mentioned.

1. **Mr. Karl Bethge (1847 - 1900)**

Mr. Karl Bethge was the first German Director General of the Siamese Railway who served the post from 1891-1900. His important duty was the construction of the first Siamese railway line from Bangkok to the city of Korat in the north-east at the distance of 265 kilometres. Unfortunately he died of cholera in Bangkok in 1900.

2. **Mr. Hermann Gehrts. (1854 - 1914)**

Mr. Gehrts had started his service in Siam since 1893 and became the successive Director-General of the Railway to Mr. Bethge in 1990. He resigned in 1904.

3. **Mr. Luis Wieler (1863 - 1918)**

Mr. Wieler started his career as an engineer in Siam for the first time between 1893 to 1898 then he returned to Germany. Wieler came back to Siam again in 1904 to assume the position of the third German Director-General of the Railway after Hermann Gehrts. Wieler had an extensive experience in railway constraction in Siam as he was a staff engineer for the construction of Bangkok-Korat railway line. His new responsibility required him to construct the northern and southern railway line for Siam. He devoted himself seriously for the job only until 1917. Very unfortunately on the 22nd of July 1917 Siam declared war against Germany which resulted Weiler to be captured as a prisoner of war. He was very ill during detention but was fortunate enough to be allow to go back home. However, Weiler was too ill to have a chance to see Germany again. He died on the 16th of January 1918 on a Danish ship near the coast of Africa.

Luis Weiler was the director of KSD for the time KSD working for the Royal Railway Department.

The devotion to duty of these German professionals should be emphasized here. For the fact that Mr. Weiler was not only the one who died on his duty. Another railway engineer to the northern line Mr. Eisenhofer also sacrificed his life during the tough construction of Khuntan tunnel near Lampang in 1914. His grave is still remained there for the memory of his devotion.

6. King Rama V or better known as King Chulalongkorn, son of King Rama IV was born on the 20th of September 1853. Realizing the aggressive influence from the west spreading throughout the region, King Rama IV educated his son to be a modern king. The young prince studied both traditional knowledge and modern science particularly English in order to be able to lead Siam across the troubled sea of colonialism. Throughout his reign from 1868-1910 many modern foundations were laid out, particularly education, state administration, transportation and military. He also started a modern diplomatic relationship by visiting Europe twice in order to declare Siam as a "civilized" country which was ready to cooperate with any countries on the basis of independency and mutual benefit. Among those superpowers the relationship with Prussia was noticeably based on mutual interests. At least two sons of the king were sent ot study military science at Prussia. The king himself visited Prussia twice on his diplomatic tour to Europe in 1897 and 1907 respectively which he was warmly welcomed by his royal friend Kaiser William II. The relationship between the two kingdoms was well maintained throughout his reign. His passing away in 1910 brought about a great mourning over Siam.

7. Prince Nakornsawan Worapinit or better known as Prince Boripat, a beloved son of King Rama V and Queen Sukumalmarasri, was born on the 29th of June 1881. His father sent him to study Military Science in Prussia from 1896 to 1901 where he graduated from the military academy of Potsdam, Lichterfelde and Kassel respectively. Perhaps on those years that he accumulated his admiration on German taste particularly architecture which revealed in his German designed houses in Bangkok, Wang Bangkunprom and Tamnak Somdej. Throughout his life the prince was a competent officer and administrator who was in charge in many important positions in state administration notably the Commander of the Navy in 1903, the Minister of the Navy in 1910, the Minister of the Defence in 1926 and the Minister of the Interior in 1928 respectively. Unfortunately, the prince was exiled when the Military took over the state administration in 1932 to Indonesia where he remained until his dead in 1944.

8. Prince Damrongrajanupap, a son of King Rama IV was born on the 21th of June 1862. His early education prepared him to be a military officer with a fluent English command taught by English teachers of the court. As called by the king "my right arm" Prince Damrong was a true devoted worker to his elder brother, King Rama V throughout that fourty-two years reign. He had been engaged in several important positions in the modernization of Siam particularly the Director General of the Department of Education from 1898 and the Minister of the Interior from 1892. By the both positions he firmly laid out a modern education as well as a modern state administration for Siam. Academicly he was a prominent scholar of Siam who was the founder of modern museums and libraries for the country. The prince was honored to be "the Father of History" for his scholastic activities. After the end of the reign of Rama V in 1910 his activities in the state administration was gradually faded out. When the Military took over the power in state administration in 1932 the prince exiled himself to an island in Malaysia, neighbour by the south of Siam where he spent most of the time in cultural research. However by the very late of his life he returned to Siam in 1942. The prince peacefully died a year later and left behind him almost 600 articles on history, literature and religion with some 20,000 private collection of rare books for the nation.

9. KARL DÖHRING and Bangkhunprom Palace

In fact the biggest building of the Bangkhunprom Palace compound is Bangkhumprom Palace itself which is probably the very first palace designed by German architect. The Palace was built for Prince Nakornsawan a son of King Rama V on the occasion of his graduation from a military academy in Germany in 1901. It is generally believed that Bangkhunprom Palace was designed by KSD. However if some facts are taken in consideration this believe may be changed. First of all the palace was designed in 1901 by the Department of Public Works and the construction started in 1901-1902. The Palace was finished and the unveiling ceremony took place on the 28th of December 1906. At the time KSD had just finished his study from KTH Berlin and arrived in Siam in May 1906. It is impossible for KSD to design and finish the construction of the palace within 7 months.

Architecturally the characteristic of Bangkhunprom Palace is distinctively different from other designs of KDS. The Palace is actually an imitation of Baroque architecture especially the works of B. Neumann. From the outside one sees the design of windows with its moulding imitating the design of the Residenz of Würzburg. From the inside especially the great staircase is noticeably another imitation of Neumann's staircase design method but with much lower degree of impression comparing to the staircase of the Residenz.

The staircase of Bangkhunprom Palace is divided into 2 flights. The principal flight occupies 3 quarters of the height of the lower floor. The second flight succeceds the first flight in perpendicular direction. The original model of this type of staircase should be Neumann's design at Residenz and Brühl (1741-50). Both staircases have 2 flights which the height of each flight equals a half of the height of the lower floor. The principal flight is located at the centre of the hall leading to the landing where the second flights turn back to the opposite direction leading to the hall above. The planning offers visitors to be able to observe the huge painting on the domical cieling above uniteruptedly during the time of climbing up the stair.

It is a pity that the staircase of Bangkhunprom palace couldn't follow Neumann's model beacuse the height of the lower floor is too short to install a two equal flights grand staircase. It results a rather awkward feeling when walking up the stair. Apart from that the plan of the palace is rather strange. It should have been a symmetrical plan following the Baroqne appearance of the palace but the plan actually has a very different composition between the left part and the right part. The main entrance is situated eccentrically from the centre which is undoubtfully effected by the location of the main staircase. The design of Bangkhumprom Palace is thus substantially different from the design of KSD.

The believe of KSD. designing Bangkhunprom Palace probably comes from the fact that when KSD desingned Wang Ban Puen Palace for King Rama V in 1911 he was familiar with the project manager, Prince Nakornsawan. This resulted KSD to have a commission from the Prince to design a palace for the Prince's mother (the Tamnak Somdej) and probably KSD was also given a job to make some additional decorations to the existing Banghunprom Palace. In fact there are some Jugendstil features still existed in the palace particularly the ceramic fountain and sculptures which appear very different from the Baroque atmosphere of the palace. The decoration by KSD probably brings about the confusion on the actual architect of the palace later.

10. Queen Sukumalmarasri, a daugther of King Rama IV was born on the 10th of May 1861. She was nominated a queen consort of King Chulalongkorn in 1877. She had two royal childs and the only son Prince Nakornsawanworapinit later became an important person in the modernization of Siam. She died in 1927.

11. KARL FRIEDRICH SCHINKEL (1781 - 1841)

To have a good understanding on the late 19th century German architecture, one should know K.F.SCHINKEL who was the cornerstone of the 19th century German architecture.

Schinkel was the most influencial architect of Prussia in the 19th century. Although we classified him in the group of eclecticism architect Schinkel was a pioneer of introducing new concepts and methods in architectural design which many of them were developed further by the later generations.

A son of a building inspector, Schinkel started his architectural training with the Gilly family who taught him to have a deep admiration on Greek architecture and later became the style he strongly seized throughout his career. Schinkel was a student of the first class of the newly opened Bauakademie of Berlin. He was taught to admire neo-classical architecture and rational concept in making architectural design. Carl Gotthard Langhans the architect of the Brandenburg tor was one of his teacher among those faculties.

Learning from the history was Schinkel's principle in designing architecture especially the use of materials and development of structural systems which would provide ones to understand the method and process in design. Schinkel didn't believe in the imitation of historic structure but he declared that architecture should be faithful. Structure of a building was an important matter and it should not be hidden. This principle was in fact a very advanced idea which consequently became one of the principle of the modern architecture of the 20th century.

Schinkel believed in Gothic style as the representative architectural style for Germany because it was created by the Germans. Classical architecture was less appropriate because of its alien origin. However almost all of his designs were classicism which obsessed his mind since his youth and the style was very much in favour among those elites that he served.

His famous theatre and concert hall in Berlin, the Schauspielhaus (1819-1821) is shown in a classical Greek style with a simple and solid mass. The building manifests itself in the reticulated system of stripped pilaster supports and horizontal entablatures which unifies the building's mass. The trabeation structural system forms continuous bands of fenestration on the wall. The design then reflects the purity of the structure of the building faithfully.

The Altes Museum (1824-30) in Berlin is another great work of Schinkel. This classical Greek building has a long horizontal simple mass with a very beautiful proportion. In this masterpiece Schinkel showed the association between function and beauty by adding eighteen colossal Ionic columns framed by closing antae to the front facade. The building looks sophisticated elegant from the outside even architect in a next century later Mies Van de Rohe admitted that all that could be learned about architecture could be learned from Schinkel's Altes Museum.

Schinkel's another famous building, the Bauakademie was characterized by fully expressing its structural system and function. The building had a simple geometrical mass built of brick with a cast iron roof framing. Planning of the building was based on functions inside. Structural grids were expressed by clearly distinguishing between the supporting piers and the infill fenestration panels. Later Berlin architects saw the building as a model of utilitarian design. In fact Schinkel absorbed this kind of utilitarian concept from English factories. However he was only interested in the method of construction whereas he saw those industrialized buildings with a poor quality of aesthetic. Thus his utilitarian buildings were improved from the prototype with a greater degree of beauty.

In his residential designs, Schinkel made them less formal than his public buildings. He still used symmetrical plans but the composition of each side was not exactly the same. Classicism was still his favourite style for residences with emphasizing on beautiful proportion.

Schinkel gradually progressed in his bureaucratic profession. He was appointed as Oberbauassesor by Queen Luise in the Department of Public Works in March 1810 with the responsibility in reviewing the aesthetic component in all state-financed buildings. In 1815 he was promoted to Geheimer Oberbanrat and given particular responsibility for Berlin. He became a professor of his old school the Bauakademie of Berlin in 1820 but his substantial influence over German architects coming from his abundant designs rather than academic teaching. His last official post the Oberlandesbaudirector in 1838 spread his influence in architectural design throughout Prussia. For all his life Schinkel executed more than 70 projects and although he died in 1841 his influence on architecture still remained until the end of the 19th century.

12. Church of Apostles, Köln

This one of the most beautiful Romanesque church in Germany was started to build in 1190 and continued later. The plan of the church has a wide nave flanked by two side aisles. The width of each aisle is a half of the width of the nave. The long rectangular plan comprises two transepts the west and the east. The east end is composed of three semi-circular apses arranged in the form of a

trefoil. The intersection of the nave and the east transept forms the crossing capped by an octagonal dome whereas each of the three semi-circular aspes is covered by a half domical cieling. Originally on the outside there was a cloister by the south of the church. It was destroyed in the early 19th century when the foundation of the church was dissoloved and the church assigned to the Parish.

Architecturally, the church with the trefoil east end is the identity of a great church of the city of Köln. From the exterior this kind of churches appears to be massive and grandiose. The characteristic is enchanted by pointed roofs of towers. This pointed roof has four inclined faces joined at the top with a gable at the foot of each side. This commonly known as a Helm roof.

It is believed since the medieval period that any numbers appeared in a church always serve as symbols. The church of Apostles is not an exception. First the motif of the trefoil plan of the east end is recognized as symbol of the divine trinity. Second the number twelve of the twelve pillars of the nave is represented the twelve Apostles. Finally the Octagonal dome of the crossing the first of its kind in the Rhineland is served as symbol of the heavenly Jerusalem.

13. Baltharsar Neumann (1687 - 1753)

A great German architect of the 18th century. His excellent architectural design quality is masterly expressed in space design which are still the model for study for architects in the 20th century.

A son of a weaver, Neumann had his architectural training in a military department in Würzburg, the city at that time the seat of a prince-bishop. Actually Würzburg had a deep relationship with Neumann life and works throughout his life. Neumann had an opportunity to make a study-visit to Vienna, Austria, Bohemia and north Italy but the architecture of these places had very little influence on his personal creativity. The professional practice of Neumann was under the patronage of the prince-bishop of Würzburg Johann Philipp Franz Graf Schonborn the egoistic and impulsive patron. The first major work of Neumann was the Residenz (1719 - 53) the grandest and largest ever built palace in Würzburg for the prince-bishop. The particular interest of the design is at the staircase hall and the grand staircase. The grandiose freestanding stair leads to an intermediate landing from which two upper flights return in the opposite direction to the main level. As the stairs rise they leave the darker ground floor and lift into an open and light flooded space of the upper hall covered by a huge vault cieling approximately 20 by 30 metres. On the cieling the grand mural painting by Tiepolo was shown. Visitors are allowed to see the entire perimeter of the painting by a broad walkway surrounding the hall. Neumann's palace design with emphasizing the grand stair as a major component on the plan and the inter-relationship of space between the upper and ground level of the staircase hall became his prominent characteristic and model for imitation by other architects all over the world (even the design of Wang Bangkhunprom Palace in Siam).

The design of Schloss Bruchsal (1728-1750) was the most unusual design. The plan of the staircase hall was an oval unit which Neumann had to locate the stair within. Neumann designed a twin curved staircase climbling along the oval wall to a seperated and round shaped hall but connected by bridges to stairs and rooms located along either flank. As the visitor approches along the stair the space above becomes brighter. When the stairs reach the upper hall one find himself released within the huge space covered by a huge domical ceiling decorated by fresco of Johannes Zick. The method of spatial design in Bruchsal is actually the same method as in Residenz. Only scale, shape of plan and staircase are different. In both schlosses ones can find a common feeling when experiencing his design, the partially seen and the completely revealed, the closed and the open, the heavy and the airly, the dark and the light. These sequences of feeling are usually found in Nuemann's spatial design. In churches design Neumann focused his design on making an impressive space. His spatial composition are defined by the vault cieling and free standing columns with emphasizing on movement, light and illusions. Paintings, sculptures, stucco and gilding are among other artistic medias used by Neumann to elaborate his designs.

The Schönborn Chapel (1721-36) attached to Würzburg Cathedral was Neumann's first church design. In fact the church was originally designed by Maximilian von Welsch who designed the building as a circular domed structure with rectangular chapels located on the cross axis. When Neumann was called in, he demonstrated his design abilities with the context of another architect's work. Neumann made a re-organization by introducing the three architectural components, the free- staning, loadbearing columns, the three dimensionally curved arch and the contineous vault shell. The important of the design is on the seperation of wall structure from the dome structure. The dome is situated on the free standing columns which are connected by three dimensionall curved arches and surrounded by the wall so that the circular dome unit seems inserting into a cylinder, one form within another, like a bolt slid into its casing.

Church of Würzburg Residenz (1730-43) was the first church that Neumann exercised his dynamic balance and illusion in spatial design. He

placed a longitudinal oval with cross ovals attached to either end of the rectangular plan. In elevation these oval units are developed to be vault cieling covering the church. These ovoid forms cieling in associated with its free standing supports below make the church look more voluminous than its actual size.

Between 1742 - 1747 Nuemann designed five important churches including his masterpiece, the Wallfahrtskirche of Vierzehnheiligen in 1742 (1742- 1753) which its plan was altered until accepted in 1744. Initially the church had a Latin-cross plan with a dome covering the crossing. He also put an oval unit on the nave and the choir consisted of a cross oval. The apse and transept arms were also given a circular form. In 1744 the plan was forced to change because the local builder had placed the choir too far to the east, so that the sacred ground of the fourteen helper saints would wind up in the nave rather in the choir as intended. Neumann re-developed the plan to coincide with the holy area in the nave. The central dome at the crossing was lifted ont. Nuemann arranged a sequence of three ovals smaller - larger - smaller from entrance to choir. The ends of the smaller ovals push out the end walls the larger unit is freestanding on the nave. A major axis in the east is created by means of substantial circular transepts. The crossing now is only the place where the oval units of the nave and the choir and the circular units of the transepts meet not, the summit of the spatial composition covered by a dome. Finally the oval central nave with its freestanding columns supporting the vault cieling above becomes the most important space. The space is intensified by the heart - shaped shrine of fourteen helper saints occupied the centre of the nave. The spatial organization of Vierzehnheiligen thus represents Neumann's unrivaled ingeuity.

Neumann's architecture is, at one and the same time traditional and unique. His facade designs follow the standard practice and his plannings are not so different from the traditional designs. His promotion of various artistic media's such as paintings, sculptures, stucco and metal as integral components of architectural design can be traced back to the fifteenth century. However Neumann's creation of spatial composition is of the highest quality and it is so powerful to astonish all visitors. His architectural space is once lucid and striking. It is always gradually revealed but demanding and human.

With the highest competence, Nuemann transformed standard architectural assemblages into unique and bold creations for the generation to come.

14. Church of St. John Nepomuk, München (1733 - 40)

This elegant Baroque church was built by two German architects, the brothers Asams, Egid Quirin Asams (1692 - 1750) and Cosmas Damian Asams (1686 - 1739). Although both brothers were talent architects, neither was trained in architecture at the beginning. Cosmas Damian studied painting at the Accademia di San Luca in Rome while Egid Quirin trained in Münich with the sculptor Andreas Faistenberger. No document explains the sudden emergence of both brothers as architects. Only known is that Cosma Damian designed a church as early as 1716. The Church of St. John Nepomuk was the very last architectural work of the brothers but revealed the high competence in architecture of them. The building of the church was begun in 1733 and finished in the middle of 1740's. The significance of the church is the illusive spatial design which creates this narrow and deep church (9 metres width and 28 metres depth) appears to be much larger than the actual size. To achieve this the brother manipulated concave and convex walls, walls, broken cornices and a fantastic array of stucco decor and sculptures into an illusory, undulation oval space. Shallow wall arcades at both floor and gallery levels recede illusionistically into wall paintings. The height of the church was extended to its best to achieve the volumnious feeling. All the compositions represented the German Baroque trick in architectural design.

Viewing from the exterior the church is dominated by the elegant shape gable at the top of the front facade in associate with a central tower and bas- relief suclptures which offer the surface of the church a rich texture. The church of St. John Nepomuk is one of the most beautiful Baroque church in the city of München and Germany.

15. Darmstadt Kunstler Kolony

This artists colony was in fact a compound of residences and studio of a progressive artists group. The colony was built under the patronage of ERNST LUDWIG, the Grand Duke of Hesse between 1899 - 1908 on the Mathildenhohe hill in Darmstadt. The Grand Duke wished to revitalise the traditional industries of Hesse with the direct help of the Colony's members who were mainly younger generation artists inspired by traditional craftmen.

The important members of the Colony were also the active members of the Jugendstil movement particularly J.M. Olbrich (architect), Rudoef Bosselt (sculptor), Han Christiansen (painter), Ludwig Habich (sculptor) and Peter Behrens (architect and painter). Each member had his own house designed by the architect of the Colony J.M.Olbrich except the Behrens house was designed by the owner himself.

The Colony comprised eight residences

of its members and a work studio which was located high on the Mathildenhohe hill with the artists' houses grouped around a lower level. All buldings were designed by the Jugendstil concept which characterized by German vernacular appearance. Functional requirement was the basis of the planning which resulted an asymmetric composition to the buildings. Externally the building compositions were mainly rectilinear and quadrate on the other hand internally the decoration were largely curvilinear patterns inspired by botanical sources and colourful impressionism paintings. The interior spatial arrangements derived directly from contemporary English houses showing in a central living hall extending to two storeys in height. The Behrens house although it was designed by the same concept, the result was quite different. The house appeared more solid and sober which perhaps resulted from the deep classical spirit in the architect's mind.

The Colony was opened to the public in 1901 for the colony first exhibition called a "Document of German Art." (Ein Dokument Deutscher Kunst). This exhibition was intended to introduce the new artistic experiment to Hessian patrons and craftmen and to raise the general level of taste in the grand duchy. Olbrich's labors were greeted with mixed reactions, usually negative. However he became a famous figure among Jugendstil architects and consequently a large number of commissions followed. The buildings of the Colony themselves became a distinctive style occasionally called "Darmstadtstil" or "Secessioniststil" which inspired a lot of German followers.

It is very pity that most of the original buildings of the Colony were destroyed during the second World War. Although a continueous restoration has been taken after the war only a few buildings have survied their original characteristic.

16. Peter Behrens (1868 - 1940)

He was the only German architect invited by J.M. Olbrich to join the Artist Colony at Darmstadt and had an opportunity to design his own house in 1901. Although Behrens designed this Jugendstil house with emphasized on vernacular architecture, nature and traditional craftmanship, Behrens house was quite different from other houses in the colony designed by Olbrich. The house revealed the true "Germen spirit" by its solidity as well as classical order. However Jugendstil was characterized by the use of deep green glazed tiles decorating the corner columns of the house. Surprisingly this same method of decoration is also found at Wang Ban Puen is Siam.

Behrens left the colony in 1903 to take up the post of Director at the Dusseldorf school of Apllied Arts. For Behrens the Jugendstil design was faded away after the Darmstadt year while the classical influence gradually revealed at the later phase of his life. In 1907 Behrens cooperated with other Jugendstil architects in the establishment of the Deutscher Werkbund. At the same time he was selected to be the architect of the German giant industrial company, the A.E.G. (Allgemeine Elektricitats Gesellschaft). The engagement with A.E.G. resulted in a large number of designs ranged from factories to industrial products. His designs for A.E.G. included the famous A.E.G. Turbine Factory in Berlin (1908-09) which strongly reveals a classical appearance marrying with heavy steel frames structure. Behrens never stopped developing his architectural practice and brought his office to the highest peak before the first World War (1908-1912). During that period at least three of later the world master architects namely Walter Gropius, Ludwig Mies Van de Rohe and Le Corbusier worked in his office.

Peter Behrens was the only architect of Jugendstil movement that Mies Van de Rohe accepted his works to be included in the "Modern Architecture Movement" of the twentieth century architects.

17. The English Natural House.

At the second half of the nineteenth century, John Ruskin (1819 - 1900) and William Morris (1834 - 96) two English artists and architects established an influential idea over the artistic and architectural realm of Britain and Europe. John Ruskin wrote the important book "the Seven Lamps of Architectue" which was the fundamental menifesto of the design in art and architecture of the period. The book is in fact consisted of both progressive and conservative idea. Ruskin declared that architecture is different from buildings for its quality of beauty and respectfulness. The beauty of architecture should be inspired from the nature. Furthermore design in architecture should be faithful. Materials to be used should be hand made or finished by human labour without intervention of machines. Finally for the appropriate architectural style Ruskin proposed the well known styles of the past particularyl the Romanesque and Gothic. He saw no necessity to create a new style. William Moris was the one who push Ruskin's idea came ture. In 1895 Morris built his own house called "the Red House" on the Ruskin's concept. The house was built by traditional craftmen using hand - made bricks. The design of the house was inspired by nature with the characteristic adopted from a good taste vernacular house. The Red House later became a model of "the Natural House" followed by other architects throughout Europe. Other than an artist Morris was a socialist, he tried to raise up the artistic taste of people by protesting low quality of

industrial products. At the same time Morris promoted fine handicraft made by good quality craftmen but be could not cope with the problem of the too expensive cost that common people could not afford. Morris concept was thus only a theory which needed a further reform.

In the beginning of the twentieth century Hermann Muthesius was success in calling for the collaboration between artists and industry by using standardization to produce none expensive but good quality of mass production. The new movement finally enabled common people to consume good products with a fair price. Morris had started the movement of bringing high quality products to serve common people but his Romantic idea restricted his concept to come ture.

18. King Rama VI or better known as King Vajiravudh, the eldest son of King Rama V and Queen Sripatcharintraboromrachininat was born on the 1st of January 1880. He was sent to study in England from 1893 to 1902 and was nominated the Crown Prince of Siam in 1894 after the sudden passing away of his elder brother. The prince studied military at Sandhurt and history and law at Christ Church College, Oxford. Succeeding the throne in 1910 one of his most important activity was the including of Siam with the Allied forces declaring war against Prussia in 1917 which enabled Siam to revise many unjust treaties with England, France and Americal after the end of the war. He died in 1925.

19. Up til now more than 250 published titles of fictions translated by KSD are found.

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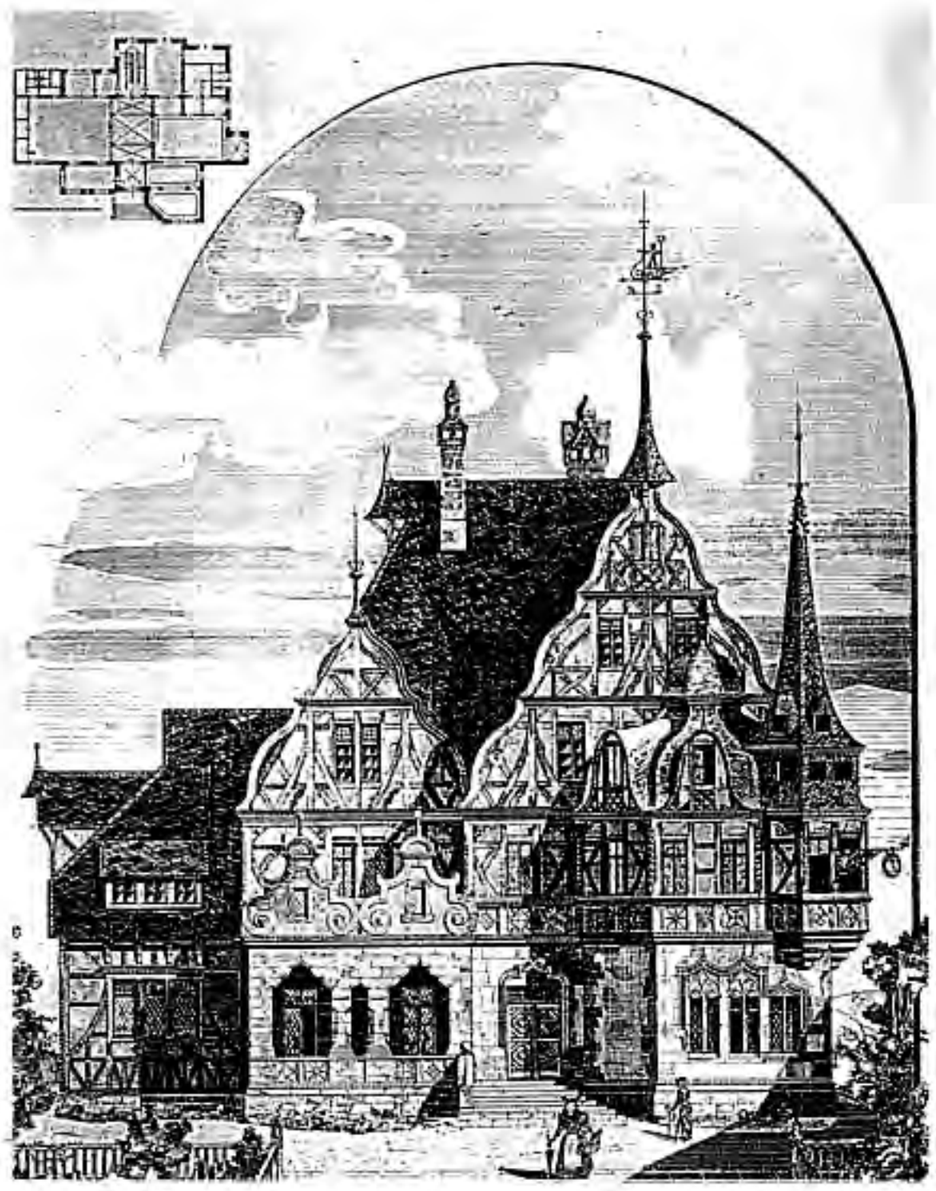
ILLUSTRATIONS



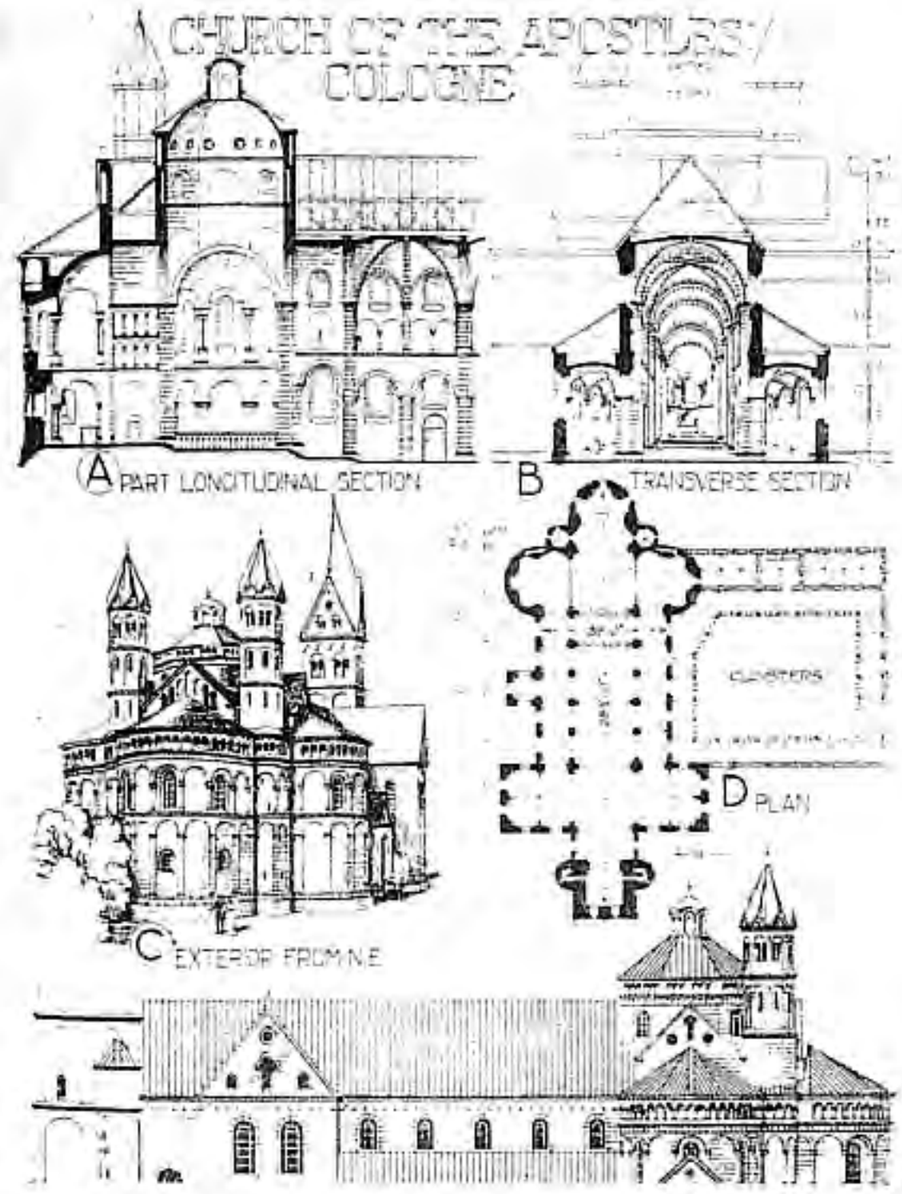
1. KARL SIEGFRIED DöHRING (KSD) the picture taken at the temple of Reclining Buddha (Wat Prachetupon) Bangkok, around 1907 - 1910.



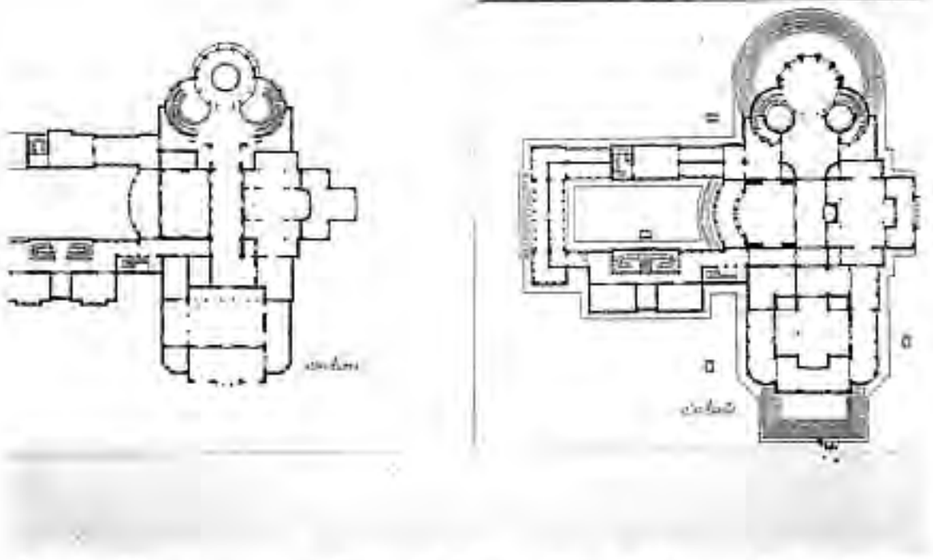
2. The Bauakademie of Berlin, later became the Koniglichen Technische Hochschule, Berlin - Charottenburg. KSD studied at the Hochschule between 1899 - 1906. The building appears in the picture was no longer existed.



3. A residential project of an architecture student of the KTH Berlin around 1900 - 1904. Noticeably eclecticism was still in favour.



4. The trefoil plan of the east end of the Church of Apostles. Köln.



5. The ground floor plan of the Wang Ban Puen Palace. the city of Petchburi. Thailand. The similarity to the plan of the Church of Apostles. Koln is clearly seen in the trefoil shape of the east end and the court surrounded by the gallery at the north side of the palace.



Fig. 39.

St. Aposteln.

6. The Church of Apostles. Köln around 1888.



7. The east end of Wang Ban Puen, please note the adjacence between the group of domical roofings and the flat wall.



8. The Schonborn Chapel, Würzburg by Baltharsar Neumann (1721 - 36) please note the adjacence between the group of domical roofings and the flat wall.



Abb. 4 Museum Folkwang Hagen, Hauptfassade mit Eingang; im Hintergrund der Turm der Marienkirche; um 191

9. The Folkwang Museum Hagen (1897) shared some degrees of similarity in the Treatment of building's mass to Wang Ban Puen especially its round corner capped by a domical roof connecting to a flat wall of the rest part of the building.



10. The spatial arrangement of the entrance hall of the Folkwang Museum. Please note the central space of the hall is emphasized by a round shape opening on the floor above in oredr to achieve the spatial interconnection between the two floor. This kind of spatial design is one of the progressive method of Jugenstil architects.



11. The round shape opening at the main stair hall of Wang Ban Puen Palace indicates the same spatial organization as the Folkwang Museum.

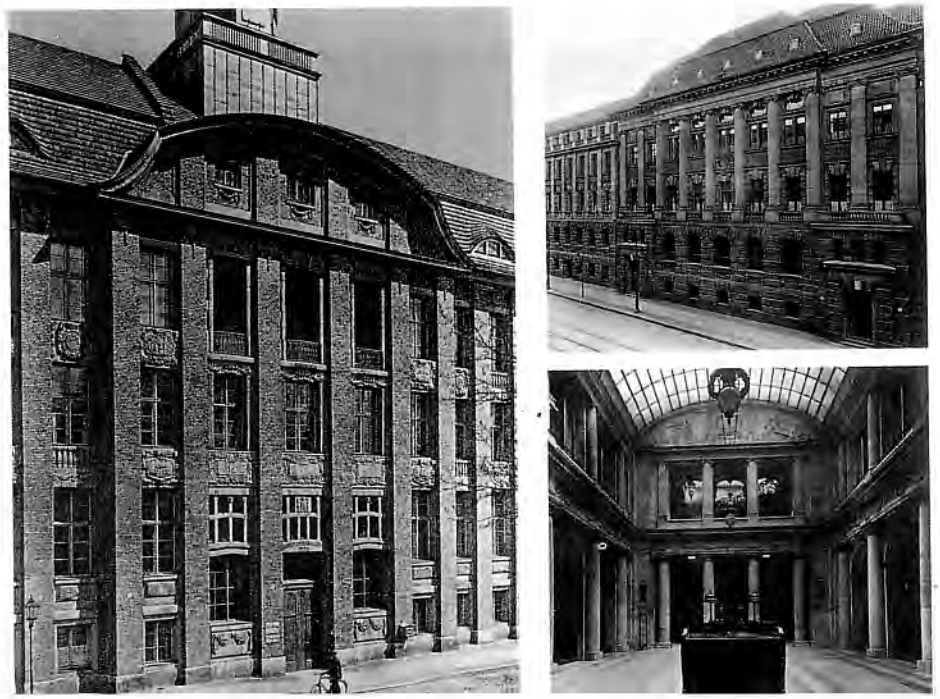


12. The west facade of Wang Ban Puen Palace. Please note the prominent shape gable with the roof tower characterized the Germanic design. At the same time the stepped roof recalls the traditional Siamese temple design which can never be found elsewhere in Europe.



13. The church of St. John Nepomuk of München (1733 - 40). Please note the elegant shape gable in associate with a central tower wheih is an identical facade design of German architecture in the Baroque period.

Architekt: Alfred Messel
33 Fassade
34 Oberlichthalle



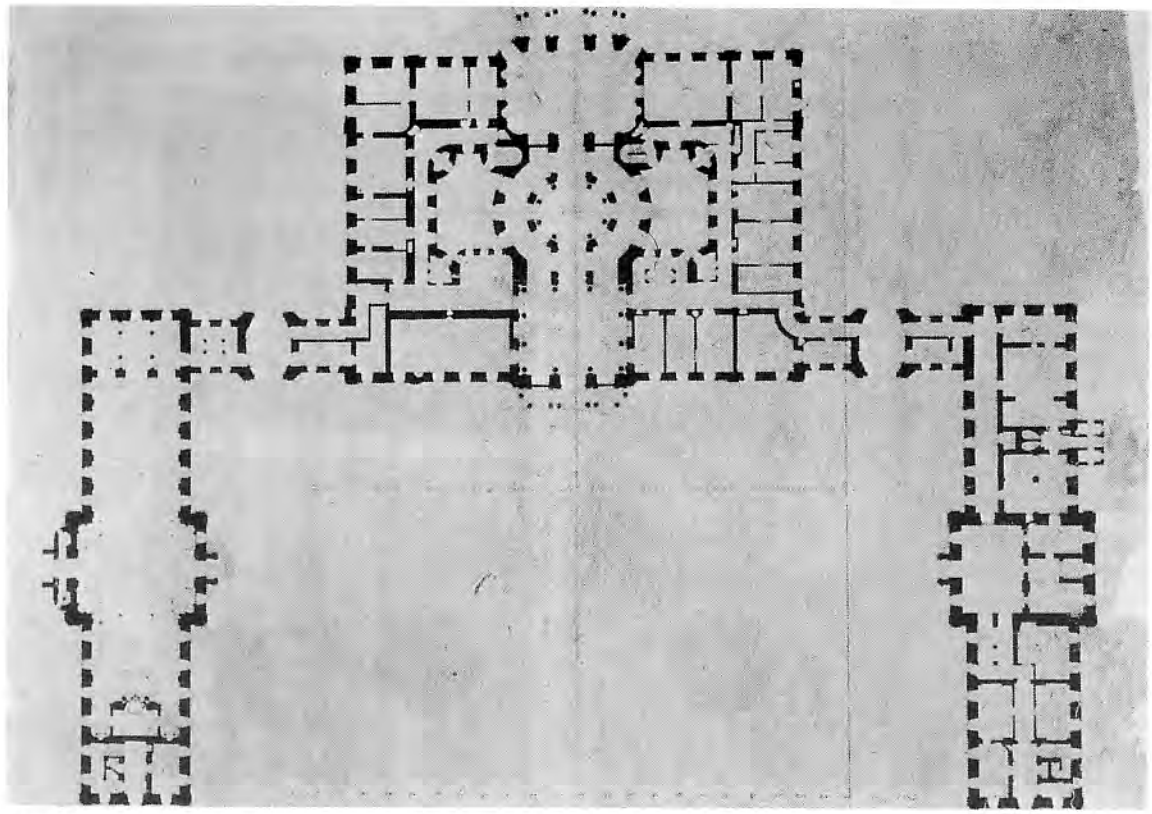
14. Modern buildings in Berlin at the beginning of the 20th century. Please note the left hand side picture, the building of the State Insurance Company of Berlin designed by Alfred Messel (1903 - 04), the Germanic shape gable was still in favour.

1911/12
im Innern Café »Piccadilly«, Kino und Restaurant;
Architekt: Franz Schwechten
64 Komische Oper in der Friedrichstraße, 1904
Architekten: Arthur Biberfeld (Fassade),
Lachmann und Zauber (Gesamtplanung)

66 Hauptttreppe
Mitarbeiter Bildhauer R. Giaecke



15. Another new building in Berlin of which facade was still influenced by a modern shape gable.



16. The ground floor plan of the Schloss Bruchsal (1728 - 1750) by Balthasar Neumann. Please note the oval shape central hall where the main staircase in curved form is situated.



17. The exterior view of the Schloss Bruchsal.



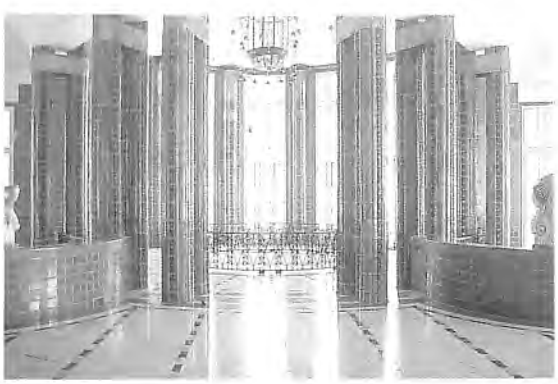
18. The space within the curved staircase of the Schloss Bruchsal. Walking up the stair gives a feeling of searching. The view and light from the space above are gradually seen.



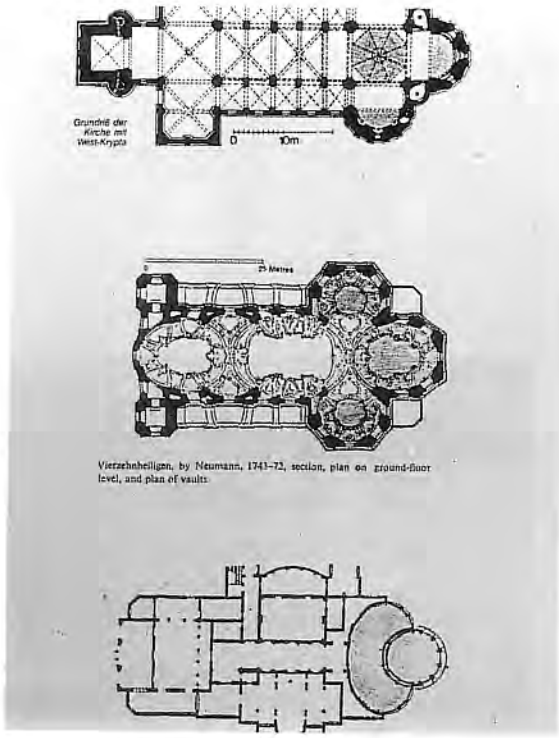
19. The space within the curved staircase of the Wang Ban Puen Palace, Petchburi, Thailand. The spatial arrangement is very similar to the Schloss Bruchsal.



20. The spatial form of the great upper hall of the Schloss Bruchsal. When visitors leave the comparatively narrow and dark staircase, one finds himself released within a spacious and bright hall decorated by fine fresco painting. The spatial arrangement is full of imagination and sentiment of Neumann.



21. The spatial form of the grand upper hall of Wang Ban Puen Palce. The same spatial design method as the Schloss Bruchsal but with slightly different architectural compositions. Please note the central domical cieling is partially surrounded by a curved flat vault which creates a feeling of movement around the dome. This kind of spatial form over the frefoil plan can only be found here in Siam.



22. The development of spatial form over the Rhenish Romanesque trefoil plan. (please note the shaded area)

Above. The Church of Apostles, Köln. Each round nich is covered by a half dome cieling while the crossing is capped by a domical cieling.

Central. The Wallfahrtskirche of Vierzehnheiligen (1744) The dome is moved from the crossing further to the east end and the west end.

Below. Wang Ban Puen Palace. The dome is put on the central lobe of the trefoil plan. The two side lobes are combined to form a curved flat vault surrounding the central dome.



23. Church of Apostles, Köln, the cieling space over the crossing is capped by an octagonal dome whereas each of the three semi-circular aspes around the crossing is covered by a half domical cieling.



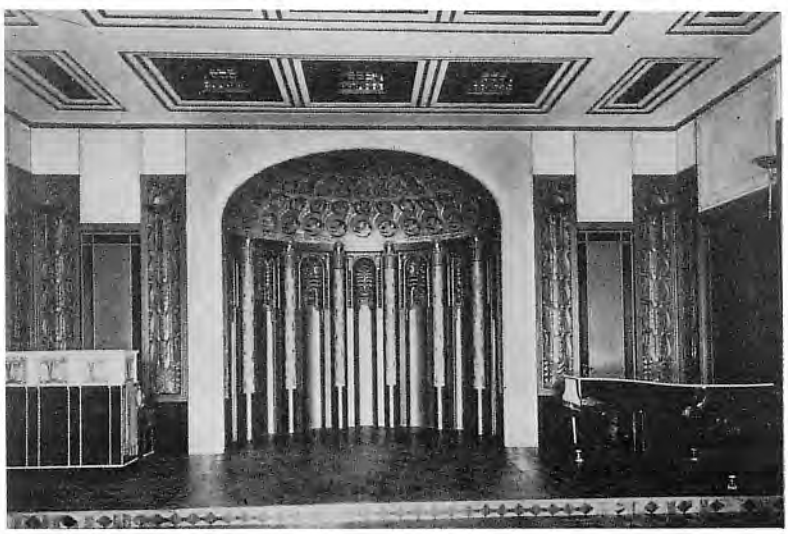
24. The Wallfahrtskirche of Vierzehnheiligen, Viewing from the nave to to the east end. The cieling space of the crossing is only the place where the oval vaults of the nave and the choir and the circular vaults of the transepts meet not the summit of the spatial composition covered by a dome. The principal space is shifted from the crossing to the central of the nave where the shrine of the fourteen helper saints is situated.



25. The spatial form of the main hall of the Gluckert Haus of the Darmstadt Kunstler Kolony. Please note the geometric form of the pendant. (no longer existed)



26. The Dinning hall of Wang Ban Puen Palace, Thailand. Please note the similarity of the pendant to the one of the Gluckert Haus.



27. The Music hall in the Darmstadt Kunstler Kolony by Albinmuller (1914). The Columns were emphasized by glossy finishing materials.



28. The Royal Bed Room (?) of Wang Ban Puen Palace, Thailand. Please note the columns are decorated with metal finish which reveals Darmstadtstil influence.



29. Behrens House by Peter Behrens (1901) in the Darmstadt Kunstler Kolony. Please note the columns were decorated with deep green glazed tiles.



30. Haus Keller in the Darmstadt Kunstler Kolony (1901). Please note the form of the building and its huge roof particulary the round shape projected apse which the mian staircase was located.



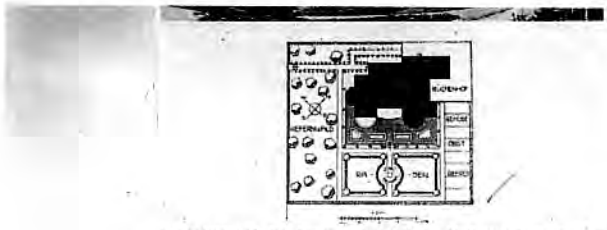
31. Tamnak Somdej of the Bang Khunprom Palace (around 1911-13). Please note the similarlity to the Haus keller particularly the form of building and the round shape projected aspe which the main staircase is situated.



32. Fluid lines decoration appeared in the decoration of Gallery Keller & Reiner (1898) and Wilke house in Guben (1901) designed by Henry Van de Velde.



33. The decoration of the Tamnak Somdej Residence, Thailand. Please note the ornament of the door way which is characterized by the fluid lines.

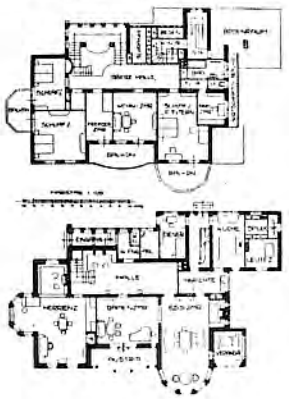


14 Site layout of Haus Neuhaus, 1906-07, by H. Muthesius: 'there has never again been such a cultured way of life in Germany.'



15 Street facade of Haus Neuhaus, Dahlem, Berlin.





34. The design of the spatial form of the main hall in "the Natural House" type which appeared in a two storey high cieling with the staircase as the linking element between the space of the both floors. The picture shows the Haus Neuhaus (1906-07) by Hermann Muthesius.



35. Tamnak Somdej Residence, Thailand. The main hall with a double storey high cieling emphasizes the interconnection between the space of the ground floor and the upper floor. (The staircase linking the two floors does not show in the picture.)

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4 Haus Hermann Muthesius Nikolassee, Rehwiesenfront

36. The Haus Nikolasse in Berlin by Hermann Muthesius (1907). The house is inspired by nature and emphasizes on utilities. Please note the form of the roof and the use of varied shapes and sizes of openings on its facades.



37. Wang Varadis Palace, Thailand (1911). Please compare the characteristic of the house to the Haus Nikolasse particularly, the use of varied shapes and sizes of openings on its facades and the form of the roof.



38. The Waldfrihof of Darmstadt where KSD's ashes were buried here from 1941 - 1988 before dismissing.