

Persian translation of this paper entitled:

نقش مهندسان آلمانی بر معماری معاصر ایران
(با تأکید بر دوره پهلوی اول بین سال‌های ۱۳۰۴ تا ۱۳۲۰)
is also published in this issue of journal.

The Role of German Engineers on Contemporary Iranian Architecture (With Emphasis on the First Pahlavi Period between 1925 and 1941)*

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Received 2018/08/29

revised 2018/12/23

accepted 2019/01/05

available online 2019/08/23

Abstract

Problem statement: Germany has always been one the most important economic, political and cultural partner of Iran. During the first Pahlavi government, Germany had had a tangible role in constructing some educational, economic, and industrial centers in Iran; hence some eminent German specialists and experts of different fields, such as industry and economy and eminent professors at universities, provided the background for the foundation of a modern country in Iran. Consequently, architecture, besides other social, political, and cultural phenomena, witnessed a substantial transformations and German architects had played a noticeable role in this process. The objective of this research is to analyses and explain the rank of German experts in Iran's contemporary architecture, in order to find out the concealed Wisdom within German architects' art pieces, and finally explain the features and criteria of the work, created by German experts and architect who were present in Iran.

The hypothesis: Theory of this research is that after Reza Shah consolidating of power, the relationship between Iran and Germany, changed from coldness, which was caused by the first world war, to become strong gradually. Furthermore, during the third decade of 20th century, Germany tried to recreate and extend their relationships with Iran. Therefore, so the connection between the two countries provided for the presence of German specialists and engineers in Iran.

Research methodology: This research uses and combines the historical interpretation, analytic and descriptive methodologies. Thus, by using the historical resources, and documents, identifying and introducing German experts and their role in Iran, and their reflection on different aspects of contemporary architecture.

Conclusion: German engineers influence on Iran's architecture can be categorized into three sections: first, the increasing quality of Iranian traditional architecture constructions and transformations, by using modern materials. Then in new practical models design field, and finally in the aestheticism and symbolism which illustrated the concealed Wisdom in German architects' constructions.

Keywords: *First Pahlavi, German Engineers, Contemporary Architecture, Traditional Architecture.*

* This article is derived from the Ph.D. thesis of Morteza Mirzahosseini entitled "The role of cultural relations between Iran and Germany in the architecture of the first Pahlavi era" carried out under supervision of Dr.Hossein Slotanzadeh and advisor Fariba Alborzi in Faculty of

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Statement of the problem

During the first Pahlavi government in Iran between 1925 and 1941, the transition process from traditional to modern period had started in different sections of the country, such as the industry, economy and also the architecture, some part of which was undertaken by German experts.

In the economic section, individuals like Kurt Lindonblatt and his accompanied group, created the modern banking in Iran; in the industrial section, companies like Hochtief and Philipp Holzmann were functioning; and in the architecture and city-building, many experts were working.

The most important parts in which German experts studied included firstly other experts and travelers, within which they conducted many research about the archeological antiquities in Iran; the second group were the engineers and experts employed by the Iranian government who were active in education and constructing new industrial schools; the third group were the engineers who were active in architecture and city-building and played an important role in bringing about and shaping the contemporary architecture of Iran.

Germans' influence on building many of official, industrial, and governmental constructions is well-evident.

Another set of groups that can be mentioned were the military experts who were employed by Iranian government in order to help to build a strong and united army in Iran.

Many of these experts not only were active in their own section but also were active in making the architectural view of Iran. Finally, by the presence of German corporations in Iran, projects like Steel Factory, Guilan Tea Factory, and some other industrial complexes were established.

It is necessary to study the background of how the contemporary Iranian architecture was shaped because the role of foreign experts in shaping the contemporary architecture of Iran never was under close observation. The subjects that were under the observation and concentration of both Iranian and

German scholars included the economic and political relations between the two countries; but the cultural views and relations, such as architecture and city-building have not been studied sufficiently.

This research investigated the influence of German experts and engineers on Iranian architecture based on the remaining documents. And the most important objective of this study is to explain the position of the German experts in shaping the contemporary architecture of Iran, and to identify the features and particular criteria of the German architectural work.

Literature review

In the [Table 1](#) some the most important studies that have been conducted regarding the architecture of the first Pahlavi's period is shown.

The noticeable feature of most of these researches is that they studied the influence of foreign experts in contemporary Iranian architecture in an overall perspective, and within one view, mostly failing to specify their different attitudes, and ideas. Consequently, the current research studied and investigated the features and particular criteria of German architectural works in Iran among the active French, British, and German architects in the Pahlavi's period ([Table 1](#)).

Theoretical background

Most of the disciplines in the human studies, particularly the history, have been formed in the course of time, and were given a name by the passage of time. In order to find out what is the cultural history, we have to probe into the history of cultural history approach and to comprehend its features and works as stated in the past ([Berg, 2010, 31](#)).

For understanding the culture of societies, anthropologists have studied the cultures which are concealed within the custom and daily life of individuals (humans) and interpreted the disguised meaning of their behaviors. These new perspectives, and the broader attention of historians to the concept of culture, made the cultural history to embark onto a new stage during the last years of the 20th

Table 1. History of research on the role of German specialists in the architecture of the first Pahlavi era. Source: authors.

Row	Research name and history	Author	Mentioned Items
1	Iranian architecture in the Pahlavi era (Rajabi, 1976)	Parviz Rajabi	Architecture has divided this course into three parts of the state riddle, the architecture of the wealthy and the architecture of public. It states that Reza Shah in his works, having the knowledge of two indisputable principles: 1 – was responsible for protecting the national identity, 2 – on the other hand, must accept and didn't have the chance to put aside the European architectural techniques and modern techniques, so this book referred to the role of German architects in the field of architectural monuments, and introduced the architect of the National Bank of Heinrich Germany.
2	Modernity and its Achievements in Iranian Architecture and Urbanism (Saremi, 1995)	Ali Akbar Saremi	The architecture and urbanism of Reza Shah era are influenced by the architecture of the pre-modern architecture of Europe.
3	A glance at architectural practices and trends in Tehran (Pakdamani, 1997).	Behrooz Pakdamani	The close relationship between Iran and Germany during Reza Shah era, and the hot debate on the superiority of the Aryan race, the activities of the German engineering teams in Iran at that time, and the return of Iranian graduates from that country, led to the construction of many state-owned buildings in a manner expanding in Germany.
4	Nikolai Markov Architecture (Victor, 2003)	Victor	The relationship between Iran and Germany in the Nazi period and the presence of architects in Iran and Iranian educators in Germany during this period created a national style similar to Germany and an honor to the ancient heritage.
5	Architecture of the first Pahlavi period (Kiani, 2004) Chapter VIII: Architects of the First Pahlavi Period	Mostafa Kiani	In this section, we can mention the role of foreign architects, including German architects such as Hérniche, Designer of the National Bank of Iran at Ferdowsi Avenue, and Mozer Co-operation in the construction of the University of Tehran, and Schultz that a German citizen.
6	Urban Anthropology (Fakouhi, 2004) Crystal Orb, Stone Uterus: Fascism and Architecture	Nasser Fakouhi	Nazi architecture was defined in three main areas, including state-owned buildings with classical style, houses and a residential style with a popular style, and industrial buildings with functionalism.
7	Art Nouveau Architecture in Iran (Haghir, 2008)	Saeed Haghir	In his article, he divides the architecture of Pahlavi first into four major sections of Art Deco, Expressionism, pre-modern rationalism, rational neoclassicism, all of which follow the Art Nouveau movement.
8	Contemporary Iranian Architecture (Banimasoud, 2009) Reza Shah's Rise and the Formation of a New Iran	Amir Banimasoud	The neoclassical style of the popular dictatorship is three factors of greatness, sustainability, and construction speed as part of the Nazi architecture, and the humiliation of ideology is the main purpose of this type of architecture.
9	The origin of modern architecture in Tehran The study of the first modern architectural style in the capital of the country (Ghobadian & Kiani, 2013)	Vahid Ghobadian Mostafa Kiani	The early modern era began in the late Qajar and was mainly imported by Iranian educated Iranians, the first modern style introduced to Iran Art Deco.
10	Stylistics and Theoretical Foundations in Contemporary Iranian Architecture (Gobadian, 2013)	Vahid Ghobadian	In Chapter 4 (First Pahlavi 1925-1941), the architectural styles of this era are as follows: 1. Traditional and traditionalism. 2. Futual. 3. Neoclassical. 4. National style. 5. Modern.

century, which is now being called “new (modern) cultural history”. Cultural history has two important characters: first, to concentrate on subjects which have been overlooked, such as analyzing the mentalities and emotions, and impalpable subjects; second, studying the theories that have been issued about culture. One of the most important feature of the cultural history is the diversity of documents. When searching around the cultural history, a numerous set of documents (official and private) is utilized for example in the plurality of documents regarding the researches of cultural history, numerous historical documents are used. Moreover, when seeking the virtual, the cultural researcher in seeking to find the disguised and internal meaning of events, i.e. those that align the events to the culture (Shahidi & Ghayoumi Bidhendi, 2014, 94).

Research methodology

The current research was qualitative which has been conducted based on documents and library information.

This research followed the criteria of a historical examination. Hence it utilized both historical-interpretational and also descriptive-analytical approaches simultaneously. Firstly, the written resources related to the subject was collected and the necessary information was extracted thereof, and finally they were analyzed. The documentary resources used in this research were provided from The Organization of Documents and Iran National Library and the historical resources included books and magazines.

Experts in the Architecture and Urbanism Fields

Architecture, like other arts and social phenomena in Iran, was under the influence of internal causes and phenomena in the society until the early years of Qajar dynasty. During the Qajar period, and through the travels of ambassadors and political and economic panels (to and from Iran), some of the characteristics of Iranian architecture have

changed gradually by imitating the architecture of those regions, particularly the Europe (Soltanzadeh, 2004, 1).

German experts had a substantial impact in constructing the governmental, industrial and service buildings. Governmental constructions such as: Tabriz municipality, Orumiyeh’s Shahr bani; service constructions such as: Azadi (Freedom) Hotel of Ramsar, Darband Police station, National Bank of Iran, The Train Station of Tehran, The Carpet Center of Iran in Tehran’s Ferdowsy Avenue; and for industrial construction, buildings like The Spinning Company of Isfahan, Iran’s Tobacco Company and Zayendehroud Textile Factory can be noted.

Karl Frisch was a German architect and city-designer regarding urbanism who began the designing and establishment of central square of Hamadan in 1908-1910. his team included Gerhard Rosenberg, Gerandeler, Steinbach by the help of and Iranian engineer Seyfollah Khan Soleimani and another Russian engineer Vladimir Charoyef (Rashad, 1990, 194).

Having extended the relationship between Iran and Germany, a group of German architects who were employed by the government to design and construct the official buildings. The most noticeable figure among these architects was Heinrich form Germany who designed the building of Iran’s National Bank (Rajabi, 1976, 42).

Max Otto Schünemann was another German figure who came to Iran during the early years of the 20th century. He was a virtuoso carpenter, and was assigned as the teacher of Art school by Berlin in Rezaeche. During his years of residence in Tabriz, alongside the “Susik” factory, he also built a great carpentry and furniture-building factory. These two factories are among the first industrial institutions at the beginning of the 20th century. Schünemann even built a Vitreous enamel factory in Isfahan, and brought a German artist accompanying himself named Wüsten, so that he would work in this factory with excellent colors. The construction of The Spinning Factory of Isfahan was the climax of

Schünemann art in Iran, which was the combination of German and Iranian architecture ([The Nasle Farda Newspaper, 2014, March 17](#)).

Schulz was a German National who designed and built the Shahpoor school in Rasht around 1935. Eric Rosher was also a German architect who played a substantial role in the architecture of that period. He, for the first time, used the combination of glass, iron and concrete for the construction of Tobacco Complex; the three materials were representative of modern architecture. It had to be said that Fischer, a German engineer, was also overseeing the construction of the Tobacco Complex. Krafter is another German engineer who built the Engineering Faculty in the yard of Darolfonun school. We can also name engineer Moser who helped building the University of Tehran ([Kiani, 2004, 225](#)).

Education and the Establishment of Industrial Schools

Germany, in the course of Pahlavi's government, alongside selling the different industries to Iran, established some engineering centers in the country responsible for training dexterous engineering forces. Iran and Germany agreed to establish high schools that would be administered according to German methods. These schools were arranged to teach engineering science and the construction of engineering centers to ambitious students. In 1925, a mutual modern school of Iran and Germany was established which was entitled "The Industrial School of Iran and Germany". The curriculum of this school consisted of teaching simultaneously the science, industry and vocational-trainings ([Yarshater, 2005, 211](#)).

In a document attributed to "the Ministry of Education, Oqaf and Meticulous Arts", on 6th June 1927, it was stated that Hanry Stronach, the citizen of Germany who was the manager and teacher in an industrial high school in Iran would end in 17th of June, But due to his competence, he would be re-employed to the government of Iran.

Another documents of National Consultative

Assembly regarding this subject belongs to the experts' presence in industrial schools, as well as the document ratified on 20th September 1936. the content of the letter states that the Ministry of Foreign Affairs asked the parliament about the employment of engineer Helmut Rush from Germany to be as a teacher in the Industrial Art School in the presence of prime minister. The panel agreed upon his employee ([Library and Document Center of Parliament, 1936: Document No. 20174236](#)). Another document of the Department of Cultivating and Industry is delivered to the National Consultative Assembly in 21st of May 1935 which is about the employment of Mr. Konman who was an engineer and teacher of cartography. The content of the document is as the following: "the budget commission with the presence of the general director of Department of Cultivating and Industry proposed and studied the issue of Mr. Konman, the engineer and teacher of cartography's reemployment, and agreed on the government's proposal. So, he sends the document to the Parliament for ratification ([Library and Documentation Center of Parliament, 1936: Document No. 20134236](#)).

Industrial architecture

Industrial factories are the new prototypes of modern functions that notwithstanding the fact that its foundation was settled during the Qajar dynasty, its progress was hindered due to the sabotage of the internal and external powers, and its establishment was postponed to the Pahlavi period. A function that alike its other contemporaneous modern spaces, had become a cause that gave a modern view to the cities of that period, dubbed as Industrial Cities. A group of cities brought about a new shape of architecture during their construction, i.e. "industrial architecture" that was created by the none-indigenous Iranian patterns under non-regional architectures mostly Germanic ones ([Pahlavanzadeh, 2014, 1](#)).

During this period, many industries were created, and factories were established in Iran by the participation of European countries. This period is the heydays of industrial architecture. Generally, the

buildings of this period were designed by European engineers (Afshar Naderi, 2004, 135).

Art deco attitude was susceptible for the industrial buildings. Hence, it was mostly preferred by Germanic architects when designing industrial buildings.

During 1936 -1941, the provisional government of Iran asked some of the foreign experts who were working in Iran, particularly Mr. Hartman from Germany, to study and analyze the possibility of establishing the first modern Steel Factory in Iran. Henceforward, in the 1937, a contract was concluded with the Demag-Group consortium, in which, by the personal decision of the Shah, it was agreed that a Steel Factory would be established near Karaj, which was only an extended village at that time. The contract was signed by Abolhassan Ebtehaj as the then director of Planning Organization (Quoted from his interview with Donya yearbook in 1947).

The use of engineers from Germany for the establishment and extension of factories and industrial buildings were widespread during the first Pahlavi's dynasty in a way that they played a substantial role in establishing, founding and designing of factories. Regarding the presence of the German engineers in designing and establishing the industrial buildings, we can refer to a document which was sent to the National Consultative Assembly for ratification on 3rd March 1927, which says that according to the important law of 1925, the government was permitted to employ a German expert for the provision of the preparatory plans in order to establish the Steel and Train factory (Library and Document Center of Parliament, 1936: Document No. 20142236).

Another document about the same subject which was ratified by the National Consultative Assembly on 21 May 1927, indicates that the Foreign Affairs commission in its session on 10th May 1927, agreed to employ Mr. Martin, the National of the Government of Germany, who was already employed for 8 months, as an expert for establishing the Iron factory in Iran (Library and Documentation Center of Parliament, 1936: Document No. 20141236); (Fig. 1).

Another contract was signed on December 27, 1936 between the Iranian government and Mr. Eric Roscher, a German national as a leading engineer for construction of the Sigat Factory (National Library and Archives of Iran, 1936, No. 0008-036632-240NLAI-). It should be noted that in a number of other documents on the subject of Mr. Ladislavo Fischer, a German national who has served as a supervisor of tobacco buildings between 1936 and 1943, refers to the document of the Ministry of Finance (National Library and Archives of Iran, 1942, document No. 0026-074582-240NLAI-). To point, in a few other documents regarding this issue about Mr. Liechten Mastein in 9/2/1933, a national of Germany, the engineer and architect of the monopoly of tobacco in Iran (National Library and Archives of Iran, 1940, No. 0005-096337-240-NLAI); (Fig. 2).

The presence of German engineers and architects in Iran and their impact on the formation and design of industrial buildings is not limited to a few finite examples. Therefore, the present study aimed at introducing some of the most important specialists and projects for its better recognition. another important document in the field of industrial architecture and the presence of German engineers in Iran is the document which refers to the Ministry of Arts and Sciences regarding Mr. Heinrich Halbeub dated 2/20/1941, which is as follows: Considering that for the supervision of construction works of the textile factory there is a need for a specialist architect, so the layout for the employment of Mr Heinrich Halbeub is submitted to the German government and requested to be approved (National Library and Archives of Iran, 1941, document No. 32/248). German specialists, using the pattern of industrial factories designed by Peter Behrenes in Germany, continued the same style and pattern in many factories in Iran (Pahlavanzadeh, 2014, 1).

Archaeological Introduction to Architecture

German national archaeologist, Ernst Herzfeld, and the head of the German Antiquities Institute was invited to be employed on the management of the

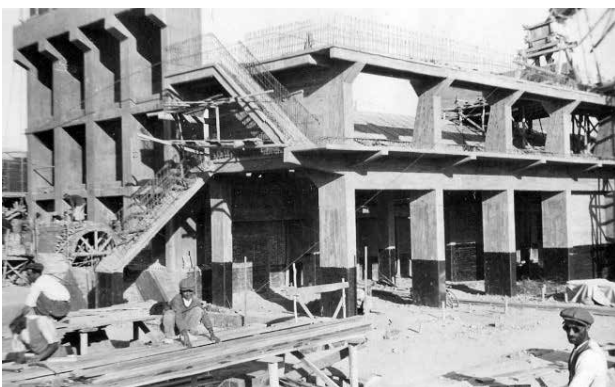
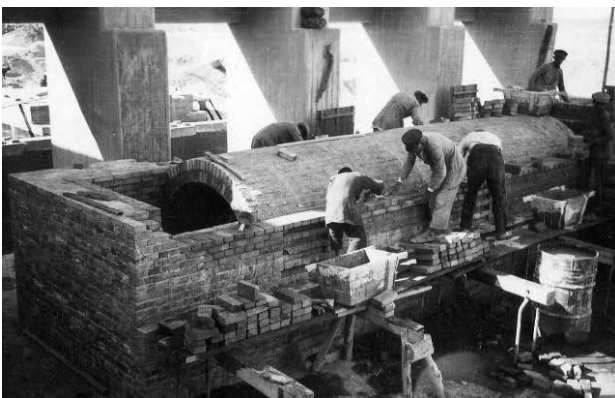


Fig.1. Stages of construction of Karaj smelter factory.
Source: www.holzmann.fh-potsdam.de



Fig. 2. Tobacco Factory Opening, 1937. Source: Archives of the Center for Contemporary Studies of Iran.

Museum of Antiquities and the National Library of Iran by the National Society for National Works (Grigor, 2009, 23).

Herzfeld was one of the most famous experts, who was also an architect, in the field of archeology, the history of art, the study of the Middle East, education and studies. (Yarshater, 2005, 102).

The important document in this area is the “Ministry of Education, Oqaf and Meticulous Arts” dated 6/8/1927, which is hired by Professor Ernst Herzfeld and is as follows: The honorable delegates are aware that the preservation and discovery of the historical monuments of each nation is one of the duties and important advocates of the nation, and each nation needs to preserve its majesty, in order not to obliterate the past, to protect the ancestors’ skills from the events of the time. For this purpose Professor Herzfeld introduces the German government for historical research (Library and Center National Documents of Iran, 1939, Document No. 20151236). Another document in this regard is the following: The contract for the recruitment of Ernst Hertzfeld, a German national who is a doctor of philosophy and professor in Berlin, is governed by the provisions of the law of June 24, 1928. Professor Herzfeld is hired for two years and five months as a teacher of history and Historical Geography (science of antiquities); (National Library and Archives of Iran, 1939, No. 21417/240).

Design and construction of public and administrative buildings

What has been mentioned so far is the presence of engineers and specialists in the field of educational,

industrial, and industrial design and monitoring, which can be merely mentioned as an observer or an engineer in the field of operation. What is important in this section is the introduction of structures that were designed by the German architects ideas and thoughts, it is easy to imagine a number of examples of German architecture in that period whose similar architecture was constructed in Iran, or may be under the influence of the thinking that Iranian government has asked them. Archaism is one of the most tangible ideas of these kinds. Perhaps one of the most important buildings that have been considered less is the building of the National Bank of Tehran Ferdowsi Avenue Branch, designed and built by Heinrich. The use of Iranian architectural elements belonging to pre-Islamic architecture is one of the hallmarks of this building alongside its other features. In the document dated 9/2/1933, which reads as follows: Offered to Mr. Hoseinqoli Khan Navab, who was appointed by the government to study the intended new National Bank building plan. According to the previous meeting, Mr. Hemmrich (Heinrich), the architect of the bank, proposed the new map which was drawn up to a scale of 1/100. The signatories assume that the new map is completely in agreement with the programs of the Board of Governors regarding its architecture ([Library And National Documentation Center of Iran, 1940, document No. 22936/240](#)); (Fig.3). Another building that Heinrich had designed in Iran, was the Iranian Carpet Company located in Ferdowsi Avenue in Tehran. This building is similar to the construction of the National Bank in terms of using ancient themes and designs and historical period of construction. Another building designed by Heinrich German was the Police Station of Darband, in which the ancient themes, such as those found in Persepolis, are directly repeated and used ([Banimasoud, 2009, 205](#)). It seems that one of the most important reasons regarding the use of ancient themes, is the presence of German experts and archaeologists who took an effective step towards using ancient themes with their presence in Iran and the introduction of historical collections (Fig.4). Another major building designed by German engineers in Iran is Tabriz Municipality, whose construction

activities began in 1935 and continued until about 1939. The Ettela'at newspaper, dated 13 January 1935, also indicates that the building was designed by German engineers and specialists as well as Iranian agents ([Sardari Nia, 2007, 5](#); [Banimasoud, 2009, 192](#)). The plan is in the form of an eagle that has opened its wings. The project is clearly visible in several examples in Germany, such as Berlin Tempelhof airport, Berlin City Hall, the Town Hall of Berlin (Rotes Rathaus) which is much like the municipality building of Tabriz. What is important in this project is the influence of the ideas of German engineers and experts on Iranian architecture, including neoclassical decorations and clock tower in this building (Fig. 5).

Other buildings that can be mentioned in this section is Shahr bani Urmia, which was designed by German engineers and created by Mullaosta, a prominent Iranian architect, whose plan is Eagles Shaped ([Cultural Heritage Organization of the West Azerbaijan, 1999, Document No. 4636/02/13](#)). Ramsar Azadi Hotel is also a building built by the Germans ([Bavar, 2017](#)), and the influence of the German neoclassical orientation on this building is clearly evident; the use of classic-age columns and realism in decorations are the hallmarks of this building. The National Bank's Tower in Tehran was also designed and built by German engineers, the combination of brick and tile in decorations alongside the brick arch and the use of an iron frame for its structure are the characteristics of this building ([Iran newspaper, 2014, 11](#)).

Constructing buildings and roads

The area of the building and the road include railways, road building, bridge building, etc., which many German engineers in Iran have been influencing their construction and development. The first document of the "Ministry of Roads" dated to 10/12/1939 referring to credits for the employment of the German nationalist Mr Conrad Piqu, the engineer of the Road Building of Amol ([National Library and Archives of Iran, 1939, No. 0003-097432-240](#)). The other document in this area was approved by Walter Walke, a German citizen for the construction of

the building and the White House Bridge on 6/3/1930, approved by the Ministry of Agriculture, Trade and Public Benefits (National Library and Archives of Iran, 1939, Document 426 / 330). Another document related to the Ministry of Roads dated 6/25/1933 regarding the recruitment of Mr Alco Yadis Laskariddis for the construction of the Iranian railway.

German Construction Companies in Iran

The German company, Philip Holzmann, was the executive of many major industrial construction projects in the Middle East, including Iraq, Iran. The company's executive projects in Iran can be called the Tehran railway station, which was built between 1935 and

1936, the Tehran Hospital (Imam Khomeini), another project of this company, completed in 1941, other works The company is a German embassy in Ferdowsi Street, built in 1941 (Pohl, 1999, 189), The Shah's port and the Aliabad railway were constructed between 1929 to 1931 by this company which can be placed in this list. Hokteyf is also the name of another German construction company, which has implemented many projects in Iran, such as Tehran's Radio Transmitter, Guilan Tea Factory (Siekmann, 2001, 78); (Figs. 6 to 9).

Analysis of research findings

Table 2 introduces the detailed analysis of the characteristics of specialists, engineers and German companies, which played the most role among foreign experts who came to Iran.

According to Table 3 The analysis of this period is based on the presence of German specialists in Iran. First, we divide the years of research that starts from 1925 and continues until 1941 into three periods, and on this basis we first study the initial period from 1925



Fig. 3. Building of National Bank of Iran, Source: Archives of the Center for Contemporary Studies of Iran.



Fig. 4. Persian Carpet Company. Source: Marefat, 1988, 439.



Fig. 5. Tabriz Municipality Building. Source: Archive of Iranian Center for Contemporary Studies.



6 A



6 B

Fig. 6. German Embassy in Tehran, 1940. Source: http://holzmann.fh-potsdam.de/?page_id=1867.

to 1933, then the middle period from 1933 to 1937 and the final period from 1937 to 1941 will be paid. In the analysis section, we will examine the impact of German engineers on Iranian architecture, as it was stated that the impact of German engineers on Iranian architecture has different aspects, this effect sometimes refers to the need for sovereignty and to advance the thinking of modern Iran in the first Pahlavi dynasty whose foremost example is the industrial architecture that clearly reflects the thoughts of German specialists. Even a kind of imitation is clearly evident in plans and views. The major trend of this architecture is the

Art Deco architecture. In Figs. 10 & 11 the important elements of this trend have been introduced regarding similar examples of industrial architecture between Germany and Iran.

Other important issues include the presence of German archaeologists and historians in Iran, which had a significant influence on the recognition of ancient Iranian art, and this recognition was an introduction to the use of ancient Iranian themes and patterns by Iranian and German architects during this period, that most occurred in administrative buildings such as municipalities and banks. The achievements of



Fig. 7. Tehran Hospital (Imam Khomeini), 1941. Source: http://holzmann.fh-potsdam.de/?page_id=653.



Fig. 8. Harbor of the Shah and Aliabad Railway, 1931. Source: <http://holzmann.fh-potsdam.de/index.php/nggallery>.



Fig.9. Tehran Railway station, 1936. Source: http://holzmann.fh-potsdam.de/?page_id=1578.

Table 2. Introduction of German Engineers, Specialists and Companies in Iran. Source: authors.

Row	Zone	German engineers / companies	Role	Year	How to Impact on Iranian Architecture
1	Architecture	Martin	Construction Engineer	1927	Specialist in construction of industrial buildings, including Iranian steel company.
2		Walter Walke	Construction Engineer	1930	Specialist in the construction of concrete bridges and buildings.
3		Schünemann	Designer	1935	Design of industrial buildings such as Risbaf Factory using Art Deco style.
4		Schultz	Designer	1935	The designer of Shahpour school of Rasht, which is made in neoclassical style, in the form of a broken cross (swastika).
5		Eric Roscher	Designer	1936	Designer of tobacco company and provider of new style in Iranian industrial architecture using concrete, iron and glass.
6		Hans Heinrich	Designer	1936	The architect and designer of the National Bank of Iran's Ferdowsi Branch and Iranian Carpet Mansion, which enjoyed ancient themes in his architecture.
7		Fischer	Supervision	1937	Observing the construction of industrial buildings related to the tobacco company.
8		Leopo Ledmelakher	Architect	1938	Design of Harirbafi Chalous factory with Art Deco style.
9		Liechten Mastein	Architect	1939	Specialist in Industrial Architecture and Tobacco Monopoly Architect.
10		Conrad Pique	Architect	1939	Design and construction of railway structures, including the Amol railway building.
11		Heinrich Halbeub	Architect	1940	Supervising the construction works of industrial buildings, including the textile factory.
12	Urban design	Karl Friesch Associates: (Rudenberg, Grundler)	Designer	1928	The German urban planner designed and implemented the main square of Hamadan.
13		Hochtief Company	Construction	1929	Specializing in the implementation of wooden houses and cooperation with Iran for the construction of wooden buildings in Khorasan
14	Construction	Hoffman	Surveyor	1927	Specialist in mapping affairs.
15		Hochtief Company	Construction	-	The company in Iran, in imitation of German buildings, founded the radio transmitter of Tehran and the tea factory in Guilan.
16		Philipp Holzmann Company	Construction	1935	The new style of construction in Iran and the use of concrete for the first time in Iran as the main element of the structure and the use of stone and brick in the facade.

German archaeologists and the use of their findings in architecture will be mentioned.

In the building of the National Bank of Ferdowsi Branch, you can clearly see the ancient themes and patterns such as congresses, capital columns, ornaments, animals and humans derived from Persepolis collection.

One of the other influences of German engineers is observed in terms of semantic and symbolic aspects of Iranian architecture. Since this period coincides with the rule of Hitler in Germany, the emergence and expression of political ideas relies on art more than the past. In period, architecture was a tool for the transference of

concepts such as the greatness, authority and stability of the Nazi government in Germany (Fakouhi, 2004, 477).

The expression of nationalist and socialist concepts in the form of architecture for preserving and registering in history is one of the characteristics of Nazi architects (Philpott, 2016, 30).

Due to the presence of German engineers and specialists, it can be clearly seen from this thinking in the architecture of various buildings designed and implemented by the Germans in Iran. In Berlin between 1933 and 1936, the use of Eagles Shaped structures was one of the main features of Nazi architecture (Matthias,

Table 3. Different periods of the presence of German specialists in Iran. Source: author.

The period	Important trends of this era in Iran	Important and influential effects on architecture
Early years 1925-1933 (Industrial)	Establishing numerous factories by German people in Iran and consolidating its position with commercial privileges. Germany was active in all fields of industry such as textiles, papermaking, tea-making, cementing, glass-making, electricity, guns, airplanes, and so on.	<ul style="list-style-type: none"> -Designing and building industrial centers - Art Deco as a common style in Iranian industrial architecture by German specialists - Imitation of German industrial architecture (form, structure, decoration) - Construction of industrial schools in several cities of Iran for the training of specialists in the field of industry
Middle 1933-1937 (Archaism)	At the time of Hitler, the Germans began massive propaganda about the commonality of the Aryan race of the two nations and the equalization of the national goals of the two countries. In 1936, they encouraged Reza Shah to order the name of their country in foreign correspondence instead of Persia, Persia, Iran as the home of the Aryans.	<ul style="list-style-type: none"> - Archaism in architecture - The use of neoclassical style in the architecture of administrative buildings to imitate many German buildings - The emergence of broken cross-shaped (swastika) planes and eagles with open wings - Symbolism is one of the important features of this era's architecture
Final 1937-1941 (Post-industrial)	The German manufacturing industry needed to be headed by German technicians, including the state-owned radio station in Tehran, built by the telephone company. The Harbors, telephone centers, telegraph stations, dams and railway stations were managed by the Germans, and German professors taught at the University of Tehran and the construction of the railway under the supervision of German engineers. The Nazi donation books filled Tehran's libraries.	<ul style="list-style-type: none"> - Construction of huge projects - Increasing the quality of construction - Attention to pre-Islamic architecture remains one of the main attributes of this era. - Partition in the process of traditional Iranian architecture and the transition to a new era



10- 1 A



10- 1 B



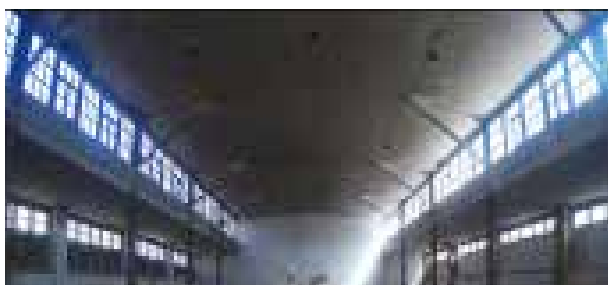
10- 2 A



10- 2 B



10- 3 A



10- 3 B

Fig. 10. Introducing similar examples of industrial architecture between Germany and Iran (Art Deco). Source: authors.

10-1 A: Stair Facade Power Station Rummelsburg, Berlin, 1925. 10-1 B: Stair Facade Risbaf Factory, Isfahan, 1935.

10-2 A: Details of windows and brick decoration, Power Station Rummelsburg, Berlin, 1925. 10-2 B: Details of windows and brick decoration, Risbaf Factory, Isfahan, 1935.

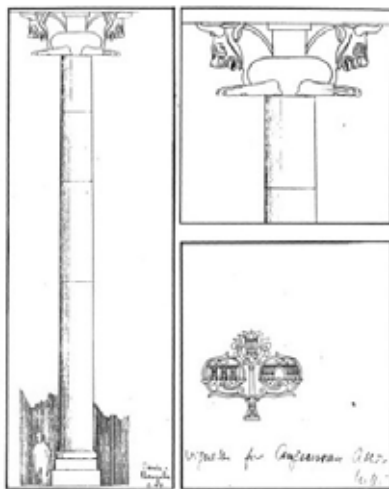
10-3 A: Metal construction, Power Station Rummelsburg, Berlin, 1925. 10-3 B: Metal construction, Risbaf Factory, Isfahan, 1935.



11-1 A



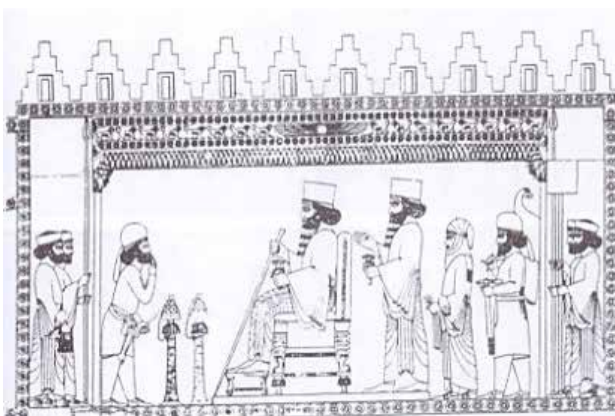
11-1 B



11-2 A



11-2 B



11-3 A



11-3 B

Fig. 11. The Influence of Archaeological Discoveries on Architecture (Archaism). Source: authors.

11-1 A: National Bank of Ferdowsi Branch, Building of the National Bank of Ferdowsi Branch using archaeological discoveries, 1936. 11-1 B: Column details National Bank, Columns of the National Bank of Ferdowsi Branch, 1936.

11-2 A: Column details National Bank, Ernest Herzfeld sketches, Persepolis. 11-2 B: Column details National Bank, Columns of the National Bank of Ferdowsi Branch, 1936.

11-3 A: Details of the walls, Roof form in Persepolis. 11-3 B: Details of the walls, Form on the walls taken from Persepolis.

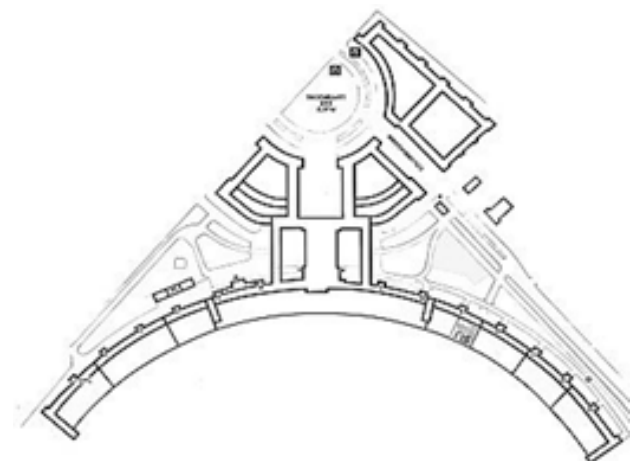
2006, 78) (Fig.12).

The Broken Cross (swastika) design in Shahpour School of Rasht is another symbolic example used by German experts in Iran (Nikoyeh, 2008, 296). Looking at the ceiling of the entrance hall of the Tehran Railway Station, which is rich in blue text and large white squares, we find with some careful consideration that some of the sides of these squares are more prominent than the other, and their prominent and sharper sides are, in fact, the roles of repeated and interconnected broken crosses (swastika). In front of this building, facing Valiasr Street, there was a statue of Reza Shah on a horse with a cape that was later destroyed. The statue was also made by the Germans, who raised the right hand to Hitler's greetings (Shargh Newspaper, No. 1046 , 25/8/2010, 20); (Figs.13 to 15).

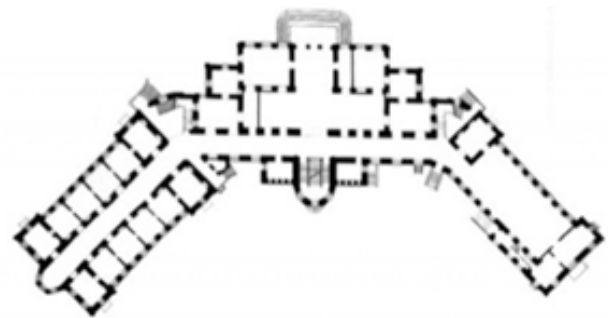
In line with the investigations, the following chart describes the characteristics and trends affecting the contemporary architecture of Iran by German specialists. Then, in accordance with Tables 4, 5 & 6 it analyzes the monuments constructed by German architects.

Conclusion

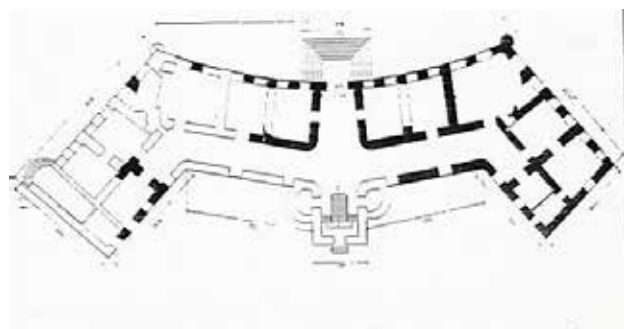
While investigating the role of German architects, experts and companies on contemporary Iranian architecture, industrial architecture was firstly introduced. This architectural style along with the dominant trend of Art Deco, has brought Iran into a new era of industrial construction through widespread use of modern materials such as concrete, rebar and iron, and the emerging brick architecture. This was common until the continuation of traditional architecture. This trend was similar to that of Germany. Architects such as Alfred Messel, Peter Behrens reduced the decor, lowered the thickness of the walls, increased luminaire and used new materials, provided a ground for the new architecture. This trend continued in Iran. In such buildings as Tobacco Company, Risbaf Isfahan, Zayendehroud Isfahan , this can be easily observed. In the administrative part, relatively new functions such as banks, commercial enterprises, such as the Iranian carpet building, were built on the part of



12- A



12- B



12- C

Fig. 12. Symbolism by German Specialists. Source: authors.

12 A: Government buildings, Germany, Berlin Tempelhof Airport.

12 B: Government buildings, Eagles Shaped Plan, Tabriz Municipality, Iran.

12 C: Government buildings, Eagles Shaped Plan, Shahr bani Urmia, Iran.

German engineers and companies. This field was also influenced by German architecture between 1926 and 1930, with new buildings and functions

expanding rapidly. It was attributed to people like Erich Mendelsohn , the famous Shocken or Eric Abel store who designed and built the industrial exhibitions. The remarkable point in this area was the significant use of ancient themes for legitimacy and creation of historical and cultural backing for the Pahlavi dynasty which had been manifested

through architecture in official and governmental buildings. Moreover, it was one of the sections that German architects have been pioneering in using these ancient patterns and themes with respect to archeological discoveries in Iran. Major buildings built in Iran have been constructed by German engineers and companies with a neoclassical

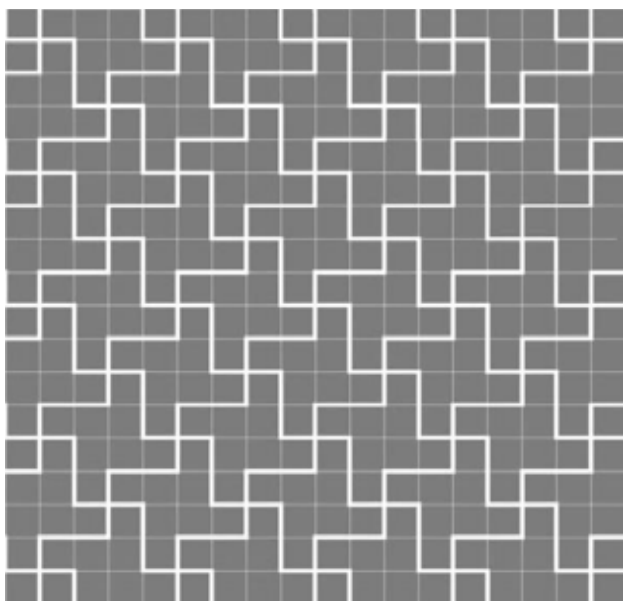


Fig. 13. pattern of the roof of the railway station of Tehran.
Source: authors.



Fig. 14. Shahpoor School. Source: <https://www.google.com/maps>.

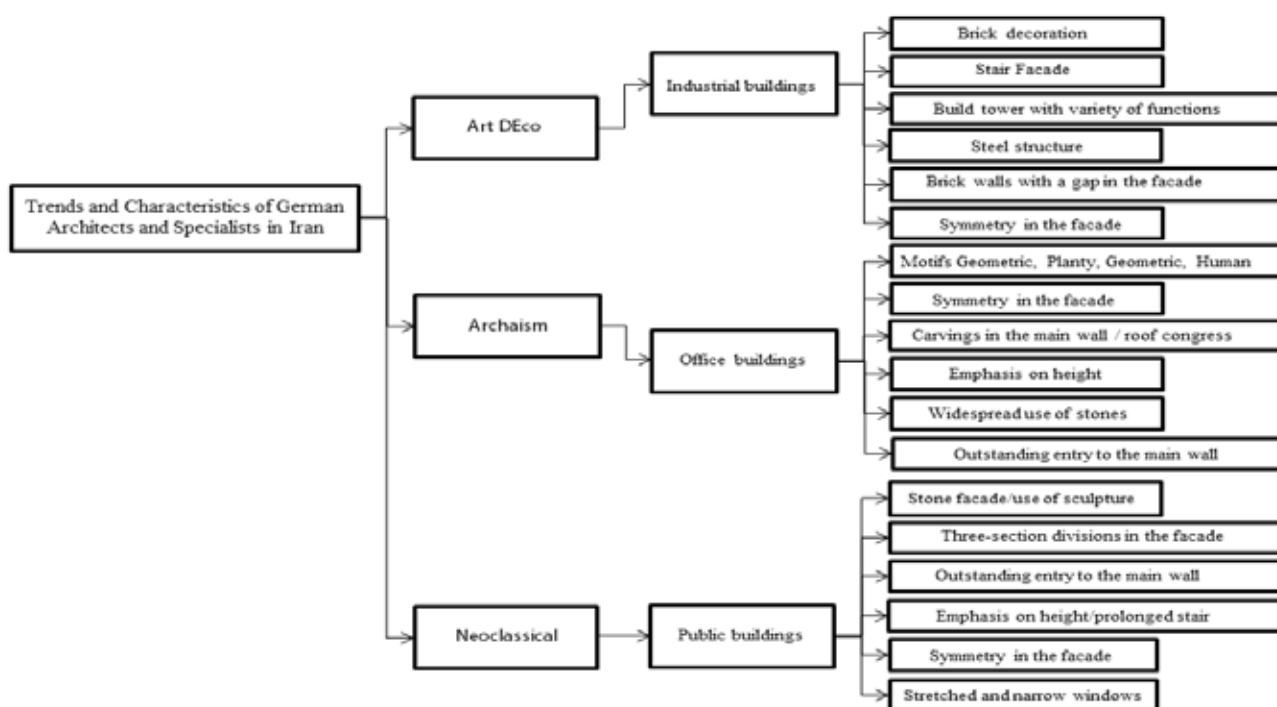


Fig. 15. Conceptual Model Explaining the Role of German Engineers in Contemporary Iranian Architecture. Source: authors.

orientation. The greatness of their buildings, their perseverance and heaviness, made them aware of their weakness and deficiencies such as the railway station in Tehran, Tabriz Municipality,

Imam Khomeini Hospital that are among the most important examples of this type of attitude. The following table (7) explains the role of German specialists in Iranian architecture.

Table 4. The role of German specialists in the architecture of Iran. Source: authors.

Row	The name of the building	Name of the architect / builder company	Tendency and style	Construction property					
				Brick decoration	Stair Facade	Build tower with variety of functions	Steel structure	Brick walls with a gap in the facade	Symmetry in the facade
1	Risbaf Factory Isfahan	Schünemann	Art Deco	*	*	*	*	*	*
2	Zayendehroud Factory	Schünemann	Art Deco	*	*	*	*	*	*
3	Kashan spinning	Schünemann	Art Deco	*	*	*	*	*	-
4	Harirbafi Chalous	Leopold Melacher	Art Deco	-	*	*	*	-	*
5	Tobacco factory Tehran	Eric Roscher	Art Deco	-	-	-	*	-	*
6	Shahreza Textile Factory	Schünemann	Art Deco	*	*	*	*	*	*
7	Chittsazi Factory	Heinrich Halbeub	Art Deco	-	*	*	*	-	*

Table 5. The role of German specialists in the architecture of Iran. Source: authors.

Row	The name of the building	Name of the architect / builder company	Tendency and style	Construction property					
				Motifs Geometric, Planty, Geometric,	Symmetry in the facade	Carvings in the main wall / roof congress	Emphasis on height	Widespread use of stones	Outstanding entry to the main wall
1	National Bank of Iran	Hans Heinrich	Archaism	*	*	*	*	*	*
2	Iran Carpet Co.	Hans Heinrich	Archaism	*	-	*	*	*	*
3	Police station Darband	Hans Heinrich	Archaism	*	*	*	*	-	*

Table 6. The role of German specialists in the architecture of Iran. Source: authors.

Row	The name of the building	Name of the architect / builder company	Tendency and style	Construction property					
				Stone facade/ use of sculpture	Three-section divisions in the facade	Outstanding entry to the main wall	Emphasis on height/prolonged stair	Symmetry in the facade	Stretched and narrow
1	The name of the building	Philipp Holzmann Company	Neoclassical	*	*	*	*	*	*
2	Imam Khomeini Hospital	Philipp Holzmann Company	Neoclassical	-	*	*	*	*	*
3	German Embassy (Tehran)	Philipp Holzmann Company	Neoclassical	-	*	*	*	*	-
4	Ramsar Hotel	-	Neoclassical	*	-	*	*	*	-
5	Shahr bani Urmia	-	Neoclassical	*	-	-	*	-	*
6	Municipality of Tabriz	-	Neoclassical	*	-	*	*	*	*
7	Municipality of Bandar Gaz	-	Neoclassical	*	-	*	*	-	*
8	Shahpoor School	Schultz	Neoclassical	*	-	*	*	*	*
9	Aliabad railway building	Philipp Holzmann Company	Neoclassical	-	-	*	*	*	*
10	Hamedan Imam Square	Karl Friesch	Neoclassical	*	*	*	-	-	*

Table 7. Explaining the Role of German Architects and Specialists in Contemporary Iranian Architecture. Source: authors.

Title	How to influence	Type / Details	The effect
Design and construction area	Architectural trends	Art Deco (Industrial architecture)	<ol style="list-style-type: none"> 1. The formation of industrial architecture and the emergence of a new form of performance. 2. The widespread use of new materials in this section led to the use of these materials in other parts of the architecture. 3. Renovation and development of industrial structures similar to Germany 4. The transformation of traditional foundations into industrial structures in large cities. 5. Establishing industrial infrastructure and contributing to the development and transformation of the country's economy during the Pahlavi era. 6. Industrial architecture was the basis for the employment of many men in the world, which led to a change in lifestyle. 7. The recruitment of German specialists for the training, establishment and commissioning of industrial plants led to the establishment of industrial schools for the development of Iranian expert forces.
		Archaism (Administrative and governmental buildings)	<ol style="list-style-type: none"> 1. Employment of German archaeologists, exploring, deducing and recording historical monuments such as Persepolis, the services of German archaeologists along with other foreign specialists to help the use of ancient artifacts in architecture. 2. Recruiting German professors in the field of history, helping to recognize and study the history of ancient Iran. 3. Governmental and government buildings were made more glorious than other buildings to demonstrate their ideological superiority; as in the magnificent buildings of the ancient times, the role of German architects was much more prominent than other foreign specialists. 4. Gradual change of urban imagery. 5. The Excellence of Iran's Cultural Excellence in the Architectural Achievements of the Germans.
		Neoclassical (Public buildings)	<ol style="list-style-type: none"> 1. Recording immortality by architecture through magnificence and building on a large scale in accordance with the ideas of Nazi Germany. 2. According to Hitler, the simplicity, power, and dignity of this trend are suitable for the buildings that people use, just in Iran, this idea was followed by German specialists. 3. Extensive use of concrete and stone in this tendency to express strength and strength and recorded in history.
	Symbolize	Eagle shape Broken Crossb (swastika)	<ol style="list-style-type: none"> 1. The direct and indirect symbolization of this course is the outcome of German architects for Iranian architecture. 2. Symbolism is one of the most important features of this era to express the ideology of the state.

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HOW TO CITE THIS ARTICLE

Mirzahosseini, M., Soltanzadeh, H. & Alborzi, F. (2019). The role of German engineers on contemporary Iranian architecture (With emphasis on the first Pahlavi period between 1925 and 1941). *Bagh-e Nazar*, 16 (74):57-76.

DOI: 10.22034/bagh.2019.142486.3708

URL: http://www.bagh-sj.com/article_92106.html

