Educational architecture and architectural education: through Dar al-Fonun to Iranianised modern universities

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\textbf{Abstract}: The European impact upon modern educational buildings started with the establishment of the Dar al-Fonun in 1851 and flourished in the architecture of the University of Tehran in the 1930s. In the late Pahlavi period in the 1960s and the 1970s, international styles were dominant in the architecture of university buildings. The first signs of returning to local vernacular forms and materials can be traced from the early 1970s. Regionalism started to shape the architectural mainstream of Iranian universities since then. This paper aims to trace the main architectural stylistic features in Iranian higher education buildings in the last two centuries. To provide a clear understanding of this, the first Iranian modern college, the first (European-style) Iranian university and a number of subsequent university buildings are chronologically studied to identify and categorise the prominent architectural styles in conjunction with main upheavals in architectural education in the past two centuries. The architecture of selected university buildings of this period exemplify both modernising and localising approaches toward which the pendulum of Iranian higher education architecture has swung.

\textbf{Keywords}: University building; architectural education; regionalism, Iran.

1. \textbf{Introduction}

‘Through its physical estate, a university can reinforce the high ideals of scholarship and institutional values to create a unique and defining sense of place’ (Coulson \textit{et al}, 2011). Through educational buildings, and university buildings in particular, secular and modern education were brought to Iranian society and locally trained Iranian architects had the opportunity to learn from these buildings, which were intended to represent the most progressive ideal architecture of the time. Higher education buildings promoted and accelerated architectural changes in society. The transformation from traditional educational buildings in the early nineteenth century to modern university buildings in the turn of the millennium are discussed in this study. Educational buildings are treated in a chronological order to convey the evolution of their architectural styles. In the following, the transition from the traditional structures, such as Maktabkhanehs and madrasas, to secular ones, such as modern colleges
and universities, is shown to project how the process of the transformation from eclectic Irano-Islamic buildings of the nineteenth century to abstract concept-based ones of the late twentieth century came about.

2. Maktabkhanehs and madrasas

Porter (1821) said that education in Persia was ‘far from being neglected by any class of the people’.

All persons of high rank have their children instructed by moullahs [religious instructors], and other preceptors, who attend their pupils at the houses of their parents. The lower orders, and often the considerable Persians, who are under the condition of nobles, send their sons to the public schools; which are planted in every town. They are commonly held in the mesjids [mosques], and sometimes in the houses of the teachers, who are mostly moullahs (Porter, 1821).

That is why almost no Iranian secular school in the early nineteenth century was recorded in foreigners’ accounts or in official reports. The education was religiously based, and was imparted either in religious spaces, such as mosques and madrasas, or in private spaces, known as Maktab or Maktabkhaneh (which were usually integrated in the houses of the religious teachers), in which ‘the scholars sit round their master on the matted floor all conning their lessons aloud’ (Porter, 1821).

Madrasas were the higher level for Maktabkhanehs to provide further studies, and they usually had a mosque built next to them. Beside Islamic teachings, madrasas covered a wide range of purposes when there were no hospitals, modern observatories and modern schools in Persia in the first half of the twentieth century (Bayani, 1972). As Daniel (1897) points out, to reach the highest level of education (Mujtahed) in madrasas, students had to further their Shia Islamic studies in Iraq.

3. Dar al-Fonun: the first secular college

Mirza Taghi Khan Farahani (Amir Kabir) was the mastermind behind the establishment of the first secular college in Iran, the Dar al-Fonun. Amir Kabir ordered Sir Davoud Khan to recruit German or Austrian instructors in preference to British, Russian, or French so as to prevent the increasing influence of those European powers upon the Persian government (Haghighat, 2007). By the time one Italian and the six Austrian teachers arrived at the Dar al-Fonun in November 1851, Amir Kabir was no longer in power. There was some hostility toward this modern technical school posthumously. Although the Dar al-Fonun was not strongly supported by his successors, the provided possibilities for members of royal family to study in a modern school sustained and strengthened the situation of the Dar al-Fonun to be supported by the government for about a century. The college later became a place for improving royal arts such as painting and, in particular, photography, which was one of the main interests of Naser al-Din Shah, and the technical and military aspects, which were Amir Kabir’s main purposes in establishing the college, became less importance than the artistic aspects. There was no course in architecture in the curriculum of the Dar al-Fonun during the Qajar period, and that is why the main upheavals in style of Naseri buildings are due to the revolution in other arts, like painting, rather than architecture itself. Therefore, for understanding the influence of the establishment of the Dar al-Fonun, as a modern institute, on Persian arts, it worth studying briefly the situation of Qajar painting, as one of the most important artistic aspects of Qajar buildings.
4. Dar al-Fonun: promoting European art

Wall painting was always a narrative means for their ambitions, dreams, and beliefs. Painting was mainly used in Qajar architecture for decorating walls while Qajar tilework was also affected by painting. During the second half of the seventeenth century, a number of Iranians sent to Italy to learn the techniques of European painting. There are different opinions as to whether Safavid painters were taught in Iran by European teachers or studied in Europe. However, there is no doubt that there were some Iranians in Italy during the late seventeenth century studying painting. They were sent by the Christian Armenian community in the Julfa district in Esfahan to learn religious paintings required for Armenian churches, and probably by the second Safavid Shah Abbas. Safavid rulers became fascinated by European paintings brought by European travellers into Iran. Oil painting firstly emerged a result of the increased relationship between the Safavid dynasty and the European countries during the seventeen century, and oil wall painting was first used in Iran in the second half of the century. The pictorial wall paintings were not only ornamental elements in their palaces, but also narrating the victories of the Iranian rulers in the battles, hunting scenes, their portraits, and also important events (Utaberta et al., 2011). Displaying paintings with the subject matter of violence and killing enemies was not by chance. The main purpose was to impress the visitors with the power of the dynasty. The use of these themes continued until the second half of the nineteenth century. The Western influence on the early Qajar paintings was only the oil technique, which was indirectly derived from Europe through Safavid paintings, and the main themes and subject matters in this era were quite Iranian. A group of forty-two Iranian students were sent to Europe in 1859, which had been the largest group by the time (Mohseni and Saradehi, 2011). Austrians and trained Iranians in Europe were the first teachers in this European based academic system. Until the late nineteenth century, ‘There was no distinction between the fine arts and the decorative arts as there was in Europe’ (Mohseni and Saradehi, 2011). Artists were trained traditionally, and they worked as members of their guilds. Naser al-Din Shah was a key factor in the advancement of new arts. The emergence of photography was coincided with the first decade of the Naseri period. He was considerably keen on photography as he himself took about 20000 photos out of 40000 photos of his collection in the Golestan Palace. Painting was also interesting for him, and he had a regular yearly visit of the Dar al-Fonun to check the students’ works and new achievements. A strong tendency toward the West led traditional architects to think of creating a sense of being European in buildings, but they did not have the necessary tools and also necessary academic knowledge even for duplicating European buildings. All they had for their inspiration was an ambiguous image of the West illustrated on postcards, wrappings, and any imported goods such as even soap covers which might convey a pattern, a scene, or a view of a European building. Painters amongst the team of decorative artists for a building were in a better position in rather than other traditional artists because of the possible chance of studying either abroad or in new established colleges.

5. Dar al-Fonun: architecture

In the Dar al-Fonun, all the classrooms were arranged around the central courtyard (Karimian, 2002), which was not an unfamiliar way of the organisation of spaces, but the Western influence was in the means of access to the classrooms from the corridor behind. However, architectural elements of the college remained Qajar in design, as the gables, arches and openings. The geometrical pattern used in the design of the pathways in the courtyard is European as well. Like St. Peter’s Square in the Vatican City, a cross and a saltire superimposing on each other were used unprecedentedly in the design of the courtyard of Iranian building, instead of following chahar bagh (literally means four garden) Persian
order. The Iranian architect Karim Teherzadeh Behzad, studied at the Istanbul Academy of Fine Arts and then the Berlin Academy of Architecture, left Germany and returned to Iran in 1926, despite getting admission to PhD in architecture in Polytechnic University in Berlin. Behzad’s proposal for the establishment of an architecture school was accepted (Shafei et al., 2006). However, the architectural programmes did not last more than a year and a half, for there was no longer any financial support from the government, seeing no priority in educating architects while having lots of uneducated traditional ones available. Nikolai Markov, a Russian architect, and Teherzadeh Behzad seem to have been the only architecture teachers at the Dar al-Fonun College at the time of the first intake of Iranian students in architecture in 1927, according to an announcement in the Ettelaat newspaper (24 September 1927). Markov diverged from Qajar architectural characteristics in his work during the reconstruction and renovation of the Dar al-Fonun in 1929. Here, he had no opportunity to blend a European plan with an Islamic elevation, as in his other works, but the combination of different Irano-Islamic architectural elements, ranging from the pre-Islamic to the Safavid period, is characteristic of his eclectic style. Behzad and the French architect Roland Dubrulle later proposed a programme for the reestablishment of architecture course, this time, in the Fine Arts School, which was successful (Shafei et al., 2006). The architecture classes were later transferred to the Higher Academy of Arts (Shafei et al., 2006), and finally to the Faculty of Fine Arts of the University of Tehran in 1940.

6. The University of Tehran

The impact of the Beaux-Arts and then of the Bauhaus School is apparent in the architecture of the University of Tehran during the first half of the twentieth century designed by the European trained architects André Godard, Maxime Siroux, and Mohsen Forughi. The Faculties of Literature and Humanities, Science, and Law in the University of Tehran are examples of the use of European architecture by Mohsen Forughi, the Beaux-Arts trained Iranian architect. The classic modern style of these buildings, in which there is no sign of decorative details of European classical styles, is reminiscent of the Palais de Chaillot built for the Exposition Internationale of 1937 in Paris. The use of this type of Stripped Classicism in Iran was most characteristic of government buildings in the 1930s, of which all of the architects were of course European-trained. In the Faculty of Fine Arts, designed by the French architect Roland Dubrulle and the Persian American architect Eugene Aftandilian (Masoud, 2009), the influence of the Bauhaus style can be seen. The faculty apparently differs from its other contemporary faculties in the campus in which, instead, the architectural system of Beaux-Arts classicism were used. Function seems to have been the main concern of the architects, and the appearance of the faculty rather contradicts with its title, as the building does not have much to say about Fine Arts. Unlike traditional Iranian educational architecture in which a central courtyard provided an isolated place for contemplation, university campuses of the twentieth century in Iran were designed to fit in a grid. The idea of courtyard, however, was revived in the planning of some universities in the late twentieth century, such as Imam Khomeini International University.

7. A shift towards Irananity through firmly established European-based architectural education

While apprenticeship in the office of practising architect had been the most common way of becoming a professional architect in Europe and United States, The École des Beaux-Arts (School of Fine Arts) established in 1819 was a unique academic institution in Europe which had no parallel in the nineteenth century (Watkin, 1986). The prestige, continuity and high seriousness of the architectural education
system made France a centre of new architectural debates during the eighteenth and nineteenth centuries (Moffett et al., 2003). Therefore, a number of foreign students were attracted to the school and, after returning to their home countries, created local variations on the Beaux-Arts curriculum. The flexibility of the method of composition which was taught in the school institutionalised a group of styles instead of being limited to one particular style, and ‘Beaux-Arts’ denotes not a style, but a number of techniques which helped to design in an appropriate way after a century of architectural turmoil (Zanten, 1977). Compared with European countries, Iran fell far behind in modern education of architecture. The first architecture schools in Iran were established in the second quarter of the twentieth century long later than those in the West. For example, Germany alone had near forty schools of architecture in 1876 (Blake, 1867). Beaux-Arts methods were abandoned by avant-garde architects with the advent of modernism in the early twentieth century (Moffett et al., 2003). However in Iran, Beaux-Arts influence was mainly reflected in the educational architecture during the first half of the twentieth century when European trained architects were commissioned to design modern schools and university buildings across country. Amanat (2013) describes a shift in architectural education towards learning from Iranian architecture by site visits, initiated by Seyhoun in the mid-1960s (Tiven, 2013). This approach in architectural education, focusing on the local architectural heritage, must have accelerated the emergence of a regionalist trend amongst Iranian architects in the 1970s and subsequent revivalist movements.

8. International style is fading away

By the early 1960s, a group from the University of Pennsylvania had outlined the first pedagogic programs for Shiraz University (known as Pahlavi University before 1979), and Minoru Yamasaki had been selected as the main architect (Kooros, 1962). This high-rise dormitory with long ribbon windows and concrete slabs on its facade, designed by the architect of World Trade Center towers (Darton, 1999), on a foothill of the university campus, remained unfinished for some time after the Islamic Revolution in 1979. The modern concrete student residence in Shiraz resembles another work of Yamasaki: the Pruitt–Igoe blocks which were demolished about twenty years after its construction in 1954. This marked the symbolic failure and the end of modern architecture according to Charles Jencks (1984). By the mid-1970s, international styles had lost their popularity in Iran as well.

Despite the astonishing view overlooking the city of Shiraz and the neighbouring gardens below, the dismay of today’s Iranian students at their outdated modern residence is apparent, and a tradition of strange harassing behaviour has been established in this building by which new residents or visitors are welcomed by a falling plastic bag of water from the upper storeys. In international styled box buildings, the physical characteristics seem to have intensified social misbehaviour, not the social variables (Newman, 1966).

The international style of modern architecture of the Iranian universities during the 1960s was supplanted by an emerging trend of revivalism in the early 1970s which aimed to return to native architectural elements.

9. Regionalism, action!

The process of the localisation of the university buildings first can be seen in the 1970s, when regionalism suddenly became the main architectural theme. Nader Ardalan’s regionalist work built in 1972, the Centre for Management Studies with Harvard University in Tehran, was a turning point in Iranian architecture during the last century. He created an ensemble of neo-vernacular buildings
meeting specific requirements of the brief and yet invoked Safavid architectural language in the geometrical patterns of the design. The courtyard and the pavilion in Persian gardens inspired him. Ardalan still admires the use of courtyard in architectural practices across the world, and he strongly believes in the necessity of reviving them even in the multi-storey apartments, like Moshe Safdie’s Habitat 67 in Montreal (Ardalan, 2014). Ardalan committed himself and his team in the use of local materials and techniques in design of what has been known since 1979 as Imam Sadegh University. Ardalan’s local solutions to the modern demands of the government opened up a wide range of possibilities of regionalism for the next generations of Iranian architects. It is quite difficult to find evidence of modernism in his work, and a spiral staircase in the central hall of the library seems to have been the only use of modern architectural language as discussed in A Critique of Contemporary Iranian Architecture (2007). Tehranian (2004), like many other political researchers, attempts to relate architectural movements to the most powerful figures of government. Upon this basis, Reza Shah would have been responsible more than anyone else for the neo-Achaemenid style during the 1930s and the Prince Farah Diba for the Irano-Islamic revivalism of the 1970s. Tehranian surprisingly names Ardalan’s Centre for Management Studies as an example of this. Ardalan’s biography demonstrates the consistency of his architectural practice and theory, and his book with Laleh Bakhtiar: Sense of Unity (1973) shows how influential he was in introducing and defining the notions of geometrical symbolism in Islamic, Iranian architecture. Therefore, positioning Ardalan as a subaltern architect, as does Tehranian in attributing this ‘new turn’ to Farah, seems quite illogical. Tehranian (2004) clarifies his point of view by referring to a proverb that ‘people emulate the style of their rulers’ and without presenting any evidence surprisingly concludes that ‘the Iranian upper and middle classes have similarly adopted the imperial or Islamic style in their personal homes and consuming identities’. In fact this was not the case, as the buildings commissioned by the private sector and even by Reza Shah himself, such as his palaces, were not Neo-Achaemenid, but eclectic, European, or modern. This gap between the architectural styles of officially commissioned buildings and the residential and commercial work of the private sector is apparent in also other periods, such as after 1979. Architecture was not necessarily the sole result of ideological stance of the Iranian governments in the twentieth century, and it was shown that other factors such as upheavals in architectural education and the presence of western trained architects in Iran were also (if not more) operatively important in shaping architectural movements (than rulers’ desires). The International Style ‘failed to meet human cultural demands, or to address the climatic and environmental issues, which became even more important in the late 1970s, when the price of energy increased significantly (Hassan Pour, 2013). In addition, the emergence of localising approaches in the architectural education of Tehran University in the mid-1960s and the successful works of Iranian architects, such as Amanat’s monument at the Azadi Square, in introducing innovative Iranian architecture opened up new horizons in modernising Iranian architecture in the early 1970s and paved the way for its spread over the subsequent decades.

The main regionalist trends in Iranian university architecture can be divided into three main streams imitative/imported regionalism, iranianised regionalism and innovative regionalism. These are described below.

### 9.1. Imitative/imported regionalism

The subtraction of circles from the brick cubic forms in Jondi Shapour University by Kamran Diba is a reminder of Louis Kahn’s Indian Institute of Management in Ahmedabad, India. A comparison between the other buildings of the Jondi Shapour University and other works of Kahn reveals further connections.
Kahn’s Phillips Exeter Academy Library in New Hampshire, completed in 1972, was probably the main inspiration for Diba in the design of the Administration Building of Jondi Shapour University.

Designed by Moghtader and Andreef Architects, yellow brickwork embellishes parts of the central library of Shiraz University and creates a contrast with the concrete fins between the windows. The local decorative element does not affect its dominant late-modern monumental character. Brutalist architecture was fashionable at the time, and the style was common in university buildings in the third quarter of the twentieth century. Another work of Moghtader and Andreef Architects is the restaurant of the campus. The pitched roofed arcade in front of this building in its use of old familiar forms in a modern way recalls the way in which the modern concrete vaults characterised the Kahn’s Kimbell Art Museum in Texas.

Amanat in Sharif Technical University in 1975 displays his artistic sensitivity in the creation of ambiguous motifs in the brick relief on its plain homologous brick background. They seem quite innovative in design. The brick relief at the entrance of a school near Stockholm, Sweden, however, indicates that the use of these artistic brick reliefs in educational spaces was not novel, if not common. Regionalist works of the 1970s present a mingled brew of imitative and local architectural elements.

The School of Visual Arts in Karaj, designed by Ali Akbar Sarami in 1993, seems to have been originated in the architectural language of Post-Modernism, except for the outside staircase which resembles that of the Achaemenid Persepolis.

The use of brick as the dominant material in the university buildings emphasises the sense of locality. Nonetheless, the geometrical arrangement of the façades of these buildings sometimes followed the aesthetic principles of late modern and post-modern architecture, and apparently, there were no local decorative details in the design of these buildings.

9.2. Iranianised regionalism; adopting Iranian architectural heritage

The Faculty of Engineering, the Faculty of Science and the dormitories of Imam Khomeini University in Qazvin in 1989 by Sheikh-Zeyneddin and Kalantari show an unprecedented use of the Neo-Qajar style in the design of a university. The architects adopted Qajar motifs and principles in shaping the façade of the buildings and the gates while being reluctant to use of tilework or other decorative details of the Qajar period. This minimalist interoperation of Qajar architecture has made their work a unique architectural reference to a period which was apparently most neglected by Iranian architects.

The return to the past and the reuse of its architectural details to embellish a modern structure became even more popular after the Islamic Revolution of 1979. Historical and postmodernist motifs used in this trend created ‘a thoughtful eclectic design’ (Hassan Pour, 2013) what Ozkan (1985) describes as Concrete Regionalism. Traditional characteristics, such as the use of arcades and colonnades, courtyards, decorative patterns, and the use of brick as the dominant material, gave these buildings a local character.
Figure 1: from left to right: Centre for Management Studies Tehran 1972; Bagh-e-Eram Students Residences, Shiraz 1973; Imam Khomeini University, Qazvin 1989 (source: [courtesy of] Aga Khan Trust for Culture).

9.3. Innovative regionalism: abstract symbols

The mosque of Jondi Shapour University is probably the most distinctively innovative building of the campus in its bold approach to redefining traditionally invariant architectural parts of a mosque, like the minaret and the dome. In fact, Diba integrates these two elements together. ‘By its refusal of traditional architectural elements, this is a determinedly modern mosque’ (Khan, 1992).

Figure 2: from left to right: Mosque of the University of Kerman, 1983; Mosque of Jondi Shapour University, Ahvaz 1980; Sport Complex of Valiasr University, Rafsanjan 1995 (source: [courtesy of] Aga Khan Trust for Culture).

The mosque of the University of Kerman, by Youssef Shariatzadeh and Mohsen Mirheydar in 1983, deconstructed the traditional image of a mosque. ‘Its cubical shape makes reference to the Ka'baa at Mecca’ (Diba, 1992), and the conventional idea of the dome and the minaret was challenged in this modern, yet familiar-to-Muslims, design.

Seyyed Hadi Mirmiran, who is famous for his unique Iranian Neo-modern style, designed the Sport Complex of Valiasr University in Rafsanjan in 1995. In this project, the function was compromised in favour of the colonial form (Hallaj, 2004). The colonial part of the complex slightly resembles that of another educational building: American Heritage Centre and Art Museum in Laramie, USA, in 1993 by Antoine Predock. The latter had also had its references to the locality, here to ‘a mountainous volcanic shape’ (Mostaedi, 2000). Mirmiran, graduated from the University of Tehran in 1968, borrows his main...
concepts from Iranian traditional forms, local icehouses in this particular project, yet his design is creative, expressive and innovative. The forms are pure, combined simply, and do not comprise function. Mirmiran, himself was interested neither in the imitation of traditional architecture nor in modern architecture, which was ignorant of the local architectural heritage with its spatial and formal concepts and lessons (Sayar, 2012). In Mirmiran’s neo-modernism, ‘history belongs to the past’ (Arbabiyazdi and Zeraat Pisheh, 2012), and he creates new forms which are not historical, but seem local, not of international modernist or postmodern styles, but which seem modern. The conical form of the building has an iconic character, by the use of which and its reference to the yakhchal the architect won the design competition. Mirmiran’s interpretative Iranian architecture illustrates an abstract design in the range of Iranian regionalist university buildings, which started with Ardalan’s work in 1970.

10. Conclusion

The establishment of the first Iranian secular college Dar al-Fonun in 1851 with its European teachers galvanised the formation of a new class of Iranian artists and craftsmen. This resulted in freedom from Orthodox Irano-Islamic art and architecture which have been well established and promoted by hereditary artists and artisans. The Naseri artists combined Iranian and European motifs and radically exerted a naïve style in decorating Qajar buildings. The shift form the Safavid revival styles of the first half of the century to European influenced and free styles of the Naseri period, however, was not sharp, but gradual. The new styles coexisted with the old ones and were not iconoclastic to the traditional designs.

The faculties of the University of Tehran in the 1930s exemplify the architectural dominance of the Beaux-Arts school over the already-forgotten Iranian architectural heritage at the time. In the second half of the twentieth century, the enthusiasm toward international styles gradually gave the way to regionalism. The 1970s became the decade of the emergence of brick university buildings, in the design of which Iranian architects borrowed some architectural elements from the works of western architects, such as Kahn. In subsequent projects, the innovation and symbolism found place beside imitation, as symbolic architectural interpretations of Iranian culture and architectural heritage have emerged.

Over the last two centuries, the architects who took up the challenge of being interactive in reconciling the architectural embodiments of tradition and modernity in Iran projected the possibilities and opened up horizons in designing with consideration of the local heritage while being modern. These regionalist experiences and the course of architectural styles in modern Iran will be informative and instructive for architects in other developing countries in which similar solutions could be applicable to reestablish a balanced relationship between modernity and local identity in architectural design.

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