When Architect Sinan was appointed as Mimarbashi (chief imperial architect) by the Ottoman Sultan, the dominating character of the Ottoman Empire was the highly centralized political power of the State. He was in this position for fifty years, between 1537 and 1587, and served three sultans: Süleyman II (Süleyman the Magnificent), Selim II and Murat III. Although personal characteristics and administrative methods of these three sultans were entirely different from each other, one common feature of the Ottoman administrative system during this period was an efficient bureaucracy and central control throughout the imperial domains. Within this framework, all construction activities, both in rural and in urban areas, were under the direct control of the central authority. The members of the “Hassa Mimarlari Ocagi” (Imperial Architects Organization) in the capital city of Istanbul were assigned by the chief architect to control all kinds of constructions—financed by Sultan and his family, high government officials, rich families and foundations—in terms of their locations, the building materials used, employment and workmanship qualities throughout the imperial domains.

At the end of 16th century, as a result of new conquests, the Ottoman Empire reached its maximum limits which is an important factor dominating the building construction policies of the Ottoman State. During this period, the total area of land was under the control of Ottoman State reached 2.5 million km² not including vassal states.⁴ At the end of 16th century, when Sultan Murat III died in 1595, including vassal states, Ottoman Empire reached approximately 20 million km² and a population of 100 million was living under the control of Ottoman State². Within this highly centralized administrative structure of the Ottoman Empire, one of the most important issues faced by the State was to establish Ottoman institutions in those newly captured areas. This was a costly process the Ottoman treasury. For example towards the end of 16th century the expenditures paid for the newly captured areas in Persia exceeded the incomes gathered from the conquest. To fulfill the gap, taxes and other incomes of Diyarbakir, Erzurum and Aleppo provinces were transferred to Persia instead of the capital city.³ Starting from the second half of 16th century, during the long campaigns of the Ottoman army, the provision of the necessary equipments to repair roads, bridges and captured castles, together with the wages of the soldiers created financial difficulties in the Ottoman treasury. In other words, conquest created more expenditures than incomes because of construction activities in the newly captured areas and military necessities of the Ottoman army.

Parallel to the other economic factors, such as changing eastern trade routes, developing capitalism in Europe and increasing prices due to devaluation of money,⁴ Ottoman treasury had serious difficulties starting from the last years of Sultan Süleyman’s period. In 1564-1565, yearly income of the treasury was nearly 183 million akçes, while expenditures were 189 million akçes. The 6 million akçes excess of expense over income was supported later from different sources.⁵ Economic difficulties multiplied towards the end of 16th century. Best indicator of this situation was the devaluation of the Ottoman coin. In mid 16th century 1 gold coin was 63 akçes, however at the end of 16th century 1 gold coin became 120 akçes, and purchasing power of the Ottoman coin decreased to a great extent.⁶

These economic problems effected the decisions taken by the central authority in construction activities. As an example, in 1571 for a mosque restoration in Edirne, chief architect Sinan was warned by the State not to make any unnecessary expenditure.⁷ Major occupations of the Hassa Mimarlari Ocagi (Imperial Architects Organization) were to prepare building and restoration projects, estimate their costs, and supervise the construction activities after the approval of the projects. A project prepared either by the mimarbashi (chief architect) or a state architect was sent through the Divan-i Humayun (Imperial Council of State) after the approval of the sultan, and the final decision was sentenced to mimarbashi to put into practice.⁸ When the types and places of all the buildings built under the supervision of Sinan as the chief architect⁹ are studied together with the documents belonging to Sinan, the following tendencies seem to stand out as the construction policies of the Ottoman State during the second half of 16th century:

1. The importance given to the constructions in Istanbul

Most of the buildings supervised by Sinan as a chief architect and financed by the state were in Istanbul (more than 75 percent of the total number of buildings signed by Sinan). State’s investments in various geographic
regions of the Ottoman Empire like Rumenia, the Balkans and the Middle East, together with those in exceptional cities like Mecca, when compared with those in Istanbul, were of a very modest scale both in quantity and scope. The main reason for this was the increasing importance of the city of Istanbul as the governmental centre of the rapidly expanding Ottoman Empire. After the conquest of Bagdad and Cairo, Istanbul had become the cultural focal point of the whole Islamic world. Within this context the "Süleymaniye Medreses" were built as the educational and cultural centre of the Islamic world. The population of Istanbul had also increased parallel to the growing importance of the city. All the regulations controlling the migration of the urban population from one city to another had failed in the case of Istanbul. One of the reasons for this was the provision of the labour force to be used in the dense construction activities in the city. As an example, only about 30 per cent of all the master workers of various crafts working at the construction site of the "Süleymaniye Mosque and Imaret" between 1553-1558 were settled in Istanbul. There was no information about where 44 per cent of the remaining part had come from, and the rest were reported to come mainly from Anatolia, Aegaean islands and other places. This example gives us an idea about the complex structure of the labour force in the city. The spatial mobility of the labour force working in the construction activities will later be discussed. Parallel to the increase in the population of Istanbul, there had arisen a need for the building of a new water supply system, and new public buildings like mosques, baths, hospitals, etc. On the other hand, another state policy was the immediate reuse of the urban lots after the big fires in the city. There is another important fact that distinguishes Istanbul from other important cities of Anatolia. Cities like Sivas, Kayseri, Konya and Ankara had completed their Turkification-Islamization process as early as the Seljuk period, and had already been equipped with public buildings like mosques, medreses, baths, etc. That means, other Anatolian cities had already completed their social infrastructure few centuries before Istanbul. This process had started in Istanbul from the mid 15th century and had continued with an increasing density all through 16th century with its peak being the period during which Sinan was the chief imperial architect of the Ottoman State.

2. Policies adopted for the development of long distance inter-regional trade

It is significant that, parallel to the importance given by the State to the development of long distance inter-regional trade within the Ottoman territory, a special attention was paid to the construction of caravanserais and some building complexes under the name of menzil külliyeleyeri to fulfill the needs of the merchants and other passengers. The most outstanding examples of this sort of buildings and building complexes are to be found on the routes connecting Istanbul to the important commercial centres of Anatolia and Middle East, on the east, and of the Balkans and Europe, on the west. As an example, the Çoban Mustafa Pasa building complex in Gebze, and the Sokullu Mehmet Pasa complex in Payas are on the main trade route connecting Istanbul to Aleppo. It is also known that the Sultan Selim building complex in Karapinar on the Konya-Eregli road, which had been built by Sinan became the nucleus of a new settlement named "Sultanïye". The underlying intentions behind all these building policies were to make these trade routes well populated and prosperous by founding new settlements along them, to provide security for caravans, to fulfill their needs, to improve trading facilities and to develop commerce in general. The output of the development in commerce was not only an increase in production and consumption, but also to provide a direct financial support to the State treasury from the increased customs charges. In this way a parallelism had been set between economic policies and construction policies.

3. The criteria and procedures determining the construction of social infrastructure

Almost half of the buildings which had been built in the fifty years period that Sinan was the chief architect were mosques. About half of these mosques were built in Istanbul. When the remaining fifty mosques, outside Istanbul are investigated, it is seen that they were built in so many different places, including big cities as well as small villages. Most of these cities and villages were in Anatolia, the rest located in the territory conquered in 16th century. Together with the Islamic cities of the Middle East like Aleppo, Damascus, Bagdad, Basra, cities like Budin, Sofia, Tirhala in Europe, where the christian population was dominant, were the location
AN AERIAL VIEW OF THE URBAN FABRIC AROUND AYASOFYA
points of those mosques. This distribution shows us that what effected the choice of a site for the construction of a new mosque was the existence of wealthy people who would support this sort of a charity rather than a formal request or the presence of a proper State's policy. Until the end of 16th century when a rich person wanted to have a mosque built, he had to apply to the architects in Istanbul. If he could have a contact with the chief architect the building would be commissioned to him. But since the chief architect could not meet all the private applications coming from all around the large domain of the Ottoman Empire, he would ask one of the many architects working with him to consult the job. This architect would be sent to the city or the village where the building was going to be built. As an example, the architect of the Muradiye Mosque in Manisa was Mahmut at the beginning of the construction. After he had died, another architect named Mehmed was assigned by Sinan in 1585 to complete the job. This building, which had been completed in 1586 was listed in Tezkiret-ül Ebniye, Tezkiret-ül Bünüyan and Tuhfet-ül Mimarı among the works of Sinan. The procedure was similar for other kinds of buildings like medreses, baths, caravanserais etc. This fact shows us that for the building of a social infrastructure like mosques, whether they were financed by the State's treasury or by wealthy people, the construction process was the same. The factors determining the building practice, like the choice of the site and the size of the building were related to the nature of the supply, not to that of the demand.

4. The process of public participation to the construction practices

We learn from the written sources that the processes of the application of city roads, water supply systems, construction of bridges, and of the buildings of social infrastructure were different from each other. There are documents providing evidence, that within the studied period, city roads were built in two ways: by the state or through using the income of foundations. Even the roads that the State had built were not completely financed from the State's budget. The owners of the houses and shops alongside the roads were to participate in the construction costs by paying a certain amount of money. The cash they paid sometimes reached great amounts. Although this amount usually remained less than one fourth of the total cost, it rarely rose about the half of the total. This cash was important to decrease the amount of money that was going to be paid from the State's treasury. Another way of repair and construction of roads was through foundations. Roads close to large foundation buildings like a mosque, a medrese, an imaret were built using the foundation incomes. Apart from these, there were also other foundations specific for the repair and construction of roads. Another commonly used method was the repairment and construction of each road in urban areas by the owners of houses and shops facing to it. There were also two methods of construction for bridges that were important within the overall transportation network. They were built either by the State or by foundations established by individuals. For the building of a bridge it was necessary that the place was suitable for passengers' flow and the people living nearby were in need of a bridge. In these circumstances, the people would apply to the kadi of the province and the Kadi would inform the centre about the problem. No matter how the bridges were built, the people assigned to take care of the bridges were called "bridge builders". The number of the bridge builders used to vary from place to place and due to the nature of the bridge. In return of their service, the bridge builders were exempted from paying taxes. The written documents also demonstrate that the sewage systems of cities were also carried out by the demand of the citizens and with their own means. As an example, a document dating from 1578 shows that the occupants of the Üsküplü neighbourhood of Istanbul applied to the "Divan-i Humayun" (Imperial Council of State) for the provision of a sewage system and got a permission of having the sewage canal of their neighbourhood connected to the St. Sophia sewage system with the condition that all the cost would be paid by the citizens themselves. The examples studied above show the active participation of citizens to both decision making processes establishing the demand and application processes of the infrastructure services within urban areas. In other words, what directed the application was the nature of the demand. On the other hand, it is obvious that in rural regions and large scale constructions, application was under the State's initiative and responsibility. As an
example, the “Kirküşme” system, that was built to meet the water demand of the increasing population of Istanbul in 16th century, is among the best engineering works of its era built under the supervision of Sinan.²¹

5. Standardization tendencies in construction practices

Architecture was not a simple guild activity in traditional Ottoman society. The architect, with his functions and his methods or organization, was an expert in bureaucracy and was a member of the ruling class. The Hassa Mimarlar Ocagi (Imperial Architect Organization) where architects were educated was a military organization and the education practised there was formed not according to the imposing consumption tendencies of a wealthy class but according to all sorts of buildings and restoration needs within the boundaries of the empire including residences, social and technical infrastructure. This makes the architect the person who carries out not only the building and restoration activities of the State, but also construction activities and building supervision in general context. The State, unlike other professions, controlled the guilds related to the building construction and especially the builders through the supervision of architects working for it.²² This control, leading to a standardization in building construction activities, was realized in the following fields:

a) from a document dating from 1572, we learn that free masters working in the field of construction like builders and carpenters should get a permission from the chief architect Sinan to carry on their work.²³ Additionally, the names of the construction masters were noted down in notebooks. When necessary the State had these masters work in its own constructions with a certain salary. In other words, the free construction workers were under the obligation of working for the State. But the chief architect Sinan was not demanding workers directly from regional kadis by sending them an official message. Generally, he used to write these messages showing the demand for the workers to the Council of State and the order taken from the Council was brought to the kadis by a paymaster or an architect together with a notebook containing the names of the masters to be brought from different places. As an example, in a message sent to the kadis of Edirne, Bursa, Amasya, Kastamonu and Larende in 1551, the stonemason and leadwork masters whose names had been written in the notebooks were ordered to be ready in Istanbul at the starting day of the construction of the Süleymaniye building complex. This process of gathering employment through the State’s order continued till the end of construction process.²⁴

b) The salary of the construction workers, like the prices of other goods and services, used to be determined by the State taking into consideration the opinions of guild organizations. Although they were not determined within the supply-demand balance in the market mechanism, these salaries were quite high and ranged according to the types of jobs.²⁵

c) A standardization tendency was observed also in the prices of building construction materials. As an example, the cost of stone used to take up about one third of the whole road construction expenses in 16th and at the beginning of 17th century. At the end of 16th century, building of a road out of stone cost 6 akçes and its repair cost 4 akçes per 150 cm² (1 zirâ varies between 75 cm to 90 cm).²⁶

d) It is significant that, there existed an organization by the State in addition to the guild system that was active in the education of the labor force. Many documents proved that together with the previously mentioned free construction workers, the unskilled workmen of the State’s organization named Acmi Oglanlar were widely used in construction activities. As an example, 55 percent of the workmen employed during the construction of the “Süleymaniye Mosque and Imaret” were paid free masters and workmen whereas 40 percent of the remaining part were State’s unskilled labour force. These unskilled labour force was used at the construction site, at stone quarries near Istanbul, at ships that transported stone, brick, sand and lumber.²⁷ Since these young people were paid a fixed daily salary by the State, we may suppose that no extra payment was made to them for working at constructions. This unskilled labour force of the State had been used in the construction of mosques and imaret buildings to a large extent. It may be stated that this fact had played an important role to teach some of them a craft. Although most of these unskilled workers of State practiced crude workmaships, some among them managed to become skilled masters in some crafts either by working with talented masters or due to their own capacity. Famous Ottoman architects like Sinan, Davud, Mehmed had been educated among
unskilled layman later to progress their abilities as carpenters, chiseledrers and the like. The State also had a very systematic policy of educating bureaucrats who supervised the qualified labour force and construction activities both in quantitative and qualitative ways.

Conclusion

The guiding principle that underlined all the large scale construction activities within the boundaries of the Ottoman Empire during Sinan’s era was the systematic control mechanisms on labour force, and the supervision of construction activities in general. The State used to control and direct the number and distribution of construction workers, the quality and priority of the building activities, the quality and price of building materials within the highly centralized organizational structure of the vast imperial territory. The people, on the other hand, used to participate during the construction and repair of the infrastructures either with financial support or as labour force.

What provided the high quality and high standard of the construction practice was the mobility of the labour force and the importance given by the State to the education of qualified work force. In 16th century Ottoman society where economic conditions were not quite convenient and the salaries and costs were kept constant for a very long time, labour was covered not by money but by social organization policies of the State. The construction of the perfect buildings that have Sinan’s signature like the Süleymaniye and Selimiye building complexes were realized within this context.

Sevgi Aktüre

6 Ibid., p. 126.
8 S. Turan, “Osmanlı Teskilatında Hassa Mimarlari”.

9 The list of Sinan’s buildings used in this study was compiled from Tezkirettül Ebnîye, Tezkirettül Bûnyan, Tutfatüllâh-ül Mimarîn and Adası Risale by A. Batur and S. Batur, and published in *Mimarlık*, No. 11, 1967, pp. 35-39.
10 I.H. Uzunçarşılı, ibid., p. 587. Six medreses around Süleymaniye Mosque were constructed in 1550-1556 to teach the students especially medicine, biology and mathematics at high levels.
17 Ahmet Refik, ibid., p. 135, document no. 51.
18 C. Orhonlu, ibid., pp. 31 and 42-44.
20 Ahmet Refik, ibid., p. 126, document no. 35.
23 Ahmet Refik, ibid., p. 113, document no. 17.
25 Ibid., p. 100.
27 Ö.L. Barkan, ibid., p. 112.
28 Ibid., p. 109 and p. 111.