AN APPROACH FOR CONSERVATION OF RAILWAY HERITAGE; ASSESSING AND EXPERIENCING THE İZMİR – AYDIN RAILWAY LINE

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FAHRETTİN EMRAH KÖŞGEROĞLU

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Approval of the Graduate School of Natural and Applied Sciences

_____

Prof. Dr. Canan Özgen
Director

I certify that this thesis satisfies all the requirements as a thesis for the degree of Master of Science.

_____

Assoc. Prof. Dr. Selahattin Önür
Head of Department

This is to certify that we have read this thesis and that in our opinion it is fully adequate, in scope and quality, as a thesis for the degree of Master of Science.

_____

Assoc. Prof. Dr. Neriman Şahin Güçhan
Supervisor

Examining Committee Members

Inst. Dr. Nimet Özgönül (METU, ARCH) _____

Assoc. Prof. Dr. Neriman Ş. Güçhan (METU, ARCH) _____

Assist. Prof. Dr. Güliz B. Altınöz (METU, ARCH) _____

Inst. Dr. Fuat Gökçe (METU, ARCH) _____

Lale Çoygun (TCDD GENEL MÜDÜRLÜĞÜ) _____

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Name, Last name : Fahrettin Emrah Köşgeroğlu

Signature :

ABSTRACT

AN APPROACH FOR CONSERVATION OF RAILWAY HERITAGE; ASSESSING AND EXPERIENCING THE İZMİR – AYDIN RAILWAY LINE

Köşgeroğlu, Fahrettin Emrah
M.S., Department of Architecture in Restoration
Supervisor: Assoc. Prof. Dr. Neriman Şahin Güçhan

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The aim of this thesis is to prepare a conservation project proposal for the first railway line in Anatolia which is the İzmir – Aydın Railway Line constructed between 1856 and 1866. The historical, political and social background is included in to the subject as well as the recent international debates on railway heritage conservation which provides main frame for the thesis.

Here, the problems regarding the Anatolian railway heritage will be defined and to develop a framework for the necessary conservation activities will be suggested including a proposal for the İzmir – Aydın railway line as the case study.

Considering the multidimensional aspects of railway heritage the architecture of the railway stations were chosen as the main focus of the thesis. The station complexes were examined in detail for this purpose. In addition to architectural survey, the history of the line, its political background, the geography in which the line is placed are included into this thesis. The evaluation and the proposal have been developed according to this wide set of information.

Keywords: railway, railway heritage, conservation, İzmir-Aydın railway line, railway station

ÖZ

DEMİRYOLU MİRASI İÇİN BİR YAKLAŞIM; İZMİR – AYDIN DEMİRYOLU HATTININ İNCELENMESİ VE DENEYİMLENMESİ

Köşgeroğlu, Fahrettin Emrah

Yüksek Lisans., Mimarlık Bölümü, Restorasyon Ana Bilim Dalı

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Bu çalışmanın konusu Anadolu'da 1856 – 1866 yılları arasında inşa edilmiş ilk hat olan İzmir – Aydın demiryolu hattı için bir koruma proje önerisi hazırlanmasıdır. Tarihi, sosyal ve politik boyutlarıyla beraber, son dönemde konuyla ilgili uluslararası tartışmalar çalışmanın ana çerçevesini oluşturmaktadır.

Çalışmanın amacı Anadolu demiryolu mirasının korunması üzerine bir metodu, İzmir - Aydın demiryolu hattının koruma projesi üzerinden tartışmaktır. Bu konuda yeni bir koruma yaklaşımın gerekliliği çalışmanın çıkış noktasını oluşturmaktadır.

Demiryolu mimarisi çalışmanın ana konusudur. Özellikle istasyon kompleksleri detaylı şekilde incelenmiştir. Aynı zamanda demiryolunun çok parçalı yapısı nedeniyle, hattın tarihi, politik ve ekonomik etkileri ve coğrafyası çalışmanın içine katılmıştır. Değerlendirme ve koruma projesi önerisi ise bütün bu geniş bilgi gruplarının değerlendirilmesi ile oluşmuştur.

Anahtar Kelimeler: demiryolu, demiryolu mirası, koruma, İzmir-Aydın demiryolu, demiryolu istasyonu

To blue elf

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CHAPTER 1

INTRODUCTION

1.1. Railway

There are many few innovations that affected the world history deeply. One of these innovations is the railway which has changed the political, economical and social organization of the world since the beginning of the 19th century.

It would be appropriate to begin with the definition of the railway: the railway has two definitions; first one is the literal meaning;

> **"railway** nc **1**.tracks on which trains travel: *a railway from London to Glasgow*. **2**.everything used in carrying people or goods by train (including trains, stations etc)"(Carver, Wallace and Cameroon, 1978:416)

From this basic definition we can consider two points; first, literally, a railway is a road made of two metal rails placed on hard base. It serves to vehicles which have metal wheels, the trains. It connects one point to the other; it draws a line on which trains travel. Railways need complementary elements to work; the mobile and immobile elements.

The mobile elements are locomotives, rolling stocks (passenger coaches and good vehicles) and special construction and maintenance vehicles. These machines have a large number of fans throughout the world. Especially, steam power engines are the most popular ones. For years, these technological instruments have been interested since they are the most attractive part of the railway (fig.1.1 and fig.1.2).

Fig.1.1 wedge-shaped snowplough no: ADB 965223, at Carlisle, England (http://www.rhc.gov.uk/herhome.htm, accessed on May 2004)

Fig.1.2: steam power engine no: 34061 in Ankara Open Air Locomotive Museum (http://www.tcdd.gov.tr/genelbilgi/muzeler/ankmuze/34061/34061.htm, accessed on January 2005)

The immobile elements are formed of two components: the architectural component which is composed of stations, depots, water reservoirs, houses, production and maintenance buildings, tunnels, bridges, viaducts, cuttings and embankments. The other component is the signalization system elements. The unification of the mobile and immobile elements constitutes the technological section of the railway (fig.1.3).

Fig.1.3: LMS extra tall ground signal
(http://www.rhc.gov.uk/herhome.htm, accessed on May 2004)

However the technological part is not sufficient to make a holistic definition of the railway. Since it affected the whole process of traditional industry and trade sectors, became the pioneer symbol of Industrial Revolution. Power of steam engines made it possible to carry raw materials, goods, manpower to production centres with high speed and industrial products could be easily distributed to the market. Problems concerning the developing industry were solved with railway not only by providing a faster way to reach the sources, but also by creating a feasible network (Özyüksel,1988:2).

At the same time, the traditional structure of both urban centres and rural land has changed due to new cultural and commercial life of the society. Travelling from city to city became faster as had never been experienced before. Accessibility of communities got easier and more comfortable. On the other hand, the changes in commercial structure affected the forms of

the cities and in almost every city to which the railway reached, the city centre moved towards station area. Changes in production techniques and commercial organization required a close relation with the main transportation network, the railway.

Today, railway is one of the most important and common transportation systems throughout the world. Not only the technological innovations, but also the accelerated need for the public transportation increased the importance of the railway. Especially after the mid of the 1970's, railway became the second fastest and safest transportation system after airways due to the development of high-speed trains. The Japanese introduced the *Shinkansen* which has 240km/h speed. Within last 30 years, European countries followed Japan in developing this high-speed train system. Moreover, when compared with the other transportation system, railways are in the first position considering preservation of environment as they produce minimum pollution .[1]

These aspects described above why taking into consideration the social aspects as well as the technological aspects in the definition of the railway. Consequently second definition becomes more specific one;

> "A modern railway has been defined as a *publicly controlled* means of transport possessing the four distinctive features of a specialised track, mechanical traction, the accommodation of public traffic and the conveyance of passengers (Bagwell, 1988:91)."

In this definition the role of *public* stands out; it has both active and passive roles due to nature of the relationship between the railway with societies. Coulls (1999;5) explains this relation in the paragraph below;

1 More detailed information can be gathered from the lectures held by RTRI (Railway Technical Research Institute). Especially the 15th Lecture under the theme of "The Environment and The Railways" which was organised in 14 November 2002 in Asashi Hall, Tokyo, shows the railways feature extremely lower CO2 emissions and it is the excellent transportation system due to the environmental efficiency. For further details; http://www.rtri.or.jp, accessed in January 2005.

> "…railways are above all *socio-technical systems* in which it is ultimately impossible to separate out the 'social' and 'technical' aspects. While it may prove desirable, or indeed necessary, to do so for analytical purposes, a proper appreciation of the historical significance of any particular railway will only be gained by seeing it in the round; as both the product of, and an influence on, wider social circumstances."

That's why the railway can not be analysed or examined only with its physical aspects. In fact, the physical environment is the reflection of the railway and the social and economical conditions that constitutes the railway. The information that the technological part posses, is far from set of technical data, it has very important clues to understand the social significance of the railway.

1.1.1. A Brief History of the Railway

The history of the railway perhaps explains best the association of the technical and the social aspects of the railway;

Although the railway has older historical roots, the birthday of the modern railway is 27 September 1825, when an English worker George Stephenson travelled with a steam engine designed by himself. The steam engine carried thirteen tons of load with a speed of 22 km/h from Stocton to Darlington (Onur, 1953:5). From this date on, railroad network has developed with increasing speed in Europe as well as in America and in Asia. At the end of 1850, the length of railroad was 23.088 km, whereas in 1907 it reached approximately 320.000 km in Europe (Onur, 1953:5; Coulls, 1999:2).

In fact, the utilisation of the rails in transportation was not a new idea when Stephenson designed his locomotive. The stone railway had been

used since the 6th century BC by the Greeks to transport ships[2] (fig1.4). On the other hand such kind of railways had limited function areas and life.

The basic idea of modern railway was developed for mining, especially for the coal pits in England. By the 17th century, wooden railways were used in the coal mine excavations in order to carry the large loads of the ore. At some date between October 1603 and October 1604 the first wooden rails were laid at Wollaton in Nottinghamshire, England, by Huntingdon Beaumont who was the leaseholder of the coal pits. In 1660, almost all of the coal pits had wooden railway to carry the coal faster and cheaper to the river or the sea bank. The tracks were pushed by mine workers or were pulled by animals such as horses. It was estimated that some 20.000 horses were employed in Newcastle coal trade in 1696 (Bagwell, 1988:92).

Fig.1.4: The “Diolkos”; oldest idea of the railway (http://holylandphotos.org/browse.asp?s=1,4,11,28,74,247, accessed on January 2005)

2 The Diolkos is a paved road which was used for the transport of boats by land on a platform ("puller of boats"). Its western section was excavated to a length of 255m on the Peloponnesos side of the Isthmus and of 204m on the Sterea Hellas side, in the precinct of the School of Engineering. Its width is 3,40 - 6,00m. It is paved with square blocks of poros and carried two grooves in the middle, at a distance of 1,50 m. from each other. On its western side it ended on a paved quay. It was used to transfer the boats between Saronic Gulf and Corinthian Bay. For further information can be gathered from http://www.sailingissues.com/corinth-canal-diolkos.html and http://www.culture.gr/2/21/211/21104n/e211dn10.html

The name of “railway” came into being at the18th century; in early times, the name of “waggonways” had emerged in north-east of England. However the term “railway” and “railroad” were born in Shropshire and was used first in England then throughout the world (Bagwell, 1988:92).

Late in the 18th century, the wooden rails were replaced by with more durable material, iron. Under the light traffic of wagons, the wooden rails needed to be replaced every 3 years. Yet, due to the increased number of wagons, annual replacement had become essential. Beginning in the mid 1700’s the developing iron industry came to the help of the mine owners; improvements in cast iron production made production of iron rails feasible. First wooden rails replaced with iron ones in 1767 in Shropshire. In 1808 wooden rails had practically disappeared from the whole system of the railways (Bagwell, 1988:93).

The turning point of the railway history was the adaptation of the steam engine to locomotion. The first person who experimented with the steam powered locomotive on railway was the English engineer Richard Trevithick. In 6 February 1804, he succeeded in travelling with a locomotive designed by him. The locomotive named “Tram-Wagon”, with two tracks behind, went 16 km of road in 5 hours on wooden rails. An imbalance between the weight of the locomotive and the load easily immobilized the train which caused it to be insufficient. This problem and the necessity to strengthen the rails which were broken under the weight of early engines had left to be solved by the next generations. Still, Trevithick’s machine could not be trusted by the investor’s and the English engineer quitted to work on locomotive due to financial problems.(Atilla, 2002:17, Bagwell, 1988:93)

At the same period, Stephenson (fig.1.5) developed his works on locomotive and railway with support of Lord Rawenswort who was the owner of iron mine and from the rich entrepreneur Edward Pease. With his success in 1825 he deserved to be mentioned as the forerunner of the modern railway solving the Trevithick’s problems with its “Locomotion” (fig.1.6) but he had to pass another test to legalize its success (Atilla, 2002:18).

In 1929, the mayors of the two big cities, Liverpool and Manchester, opened a competition to choose the best locomotive for the railway line between these two cities. The main reason for the competition was to satisfy the needs of the merchants who complained about the ship transportation and wanted to establish railways instead. The other reason was to bring an end to dispute between the designers of the locomotives. The prize was £500. In order to win the prize, the locomotive should not have exceeded six tons of weight and it had to pull at least three times of its own weight at a speed not less than ten miles per hour. There was one winner; Stephenson's locomotive, the "rocket" (Bagwell, 1988:94).

Fig.1.5: George Stephenson

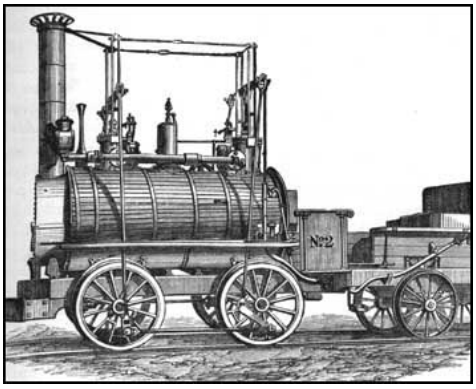


Fig.1.6: The Locomotion designed by Stephenson

The railway age began in 15 September 1830 with the opening of the Liverpool – Manchester railway with Stephenson's locomotive. From this date on, the regular train circulation expanded all over England (Atilla, 2002:20). By 1844, the railway network reached to 3.600km connecting almost all of the big cities including London, Birmingham, Bristol, Southampton, Brighton and Dover (Bagwell, 1988:96).

The main energy source was coal in the 18th century. But the transportation cost of coal was much higher than the production cost. In the 19th century, Stephenson had found a solution to the transportation problem that the mine owners were suffered from. In 1852, there were only three cities that were not connected to the railway network in England. In the first twenty years after the invention of railway, the production of iron and coal had been tripled in England. At the same time, the railway paved the way for foundation of steel industry. The production of cheap and high quality steel gave rise to new industries such as building and ship construction, and chemical industries (Özyüksel, 2000:4).

Although England had a pioneer role in the development of the railway, other European countries - Germany, France, Italy –, as well as The United States followed England in a short period of time in the railway competition. In 1835 the first railway line of continent of Europe was opened in Germany.

France and Italy followed Germany. In 1850, the railway network lengths were 11.000km in England, 6.000km in Germany, 3.000km in France, 2.000km in Austria-Hungary and 176 km in Italy. Denmark, Sweden and Spain began to establish their railways at the end of the 1840's (Atilla, 2002:23).

The railway had greater impact in The United States when compared to the Europe. With the introduction of the railway, the "untouched" lands in the American Continent became accessible for the immigrants who came from Europe. The vastly large steppes which belong to the Indians were opened to the white people, originated from England, Ireland or Italy by means of the railway (Atilla, 2002:24). America was re-conquered 400 years after it was discovered.

At the same time, railway, with its qualified advantages, became a useful instrument of imperialism; it was the physical image of the exploitation of colonies by imperial powers[3]. Coulls (1999;3) defines the role of railway in the process of imperialism in the following way:

> "Imperial penetration had always begun from ports, but until the coming of the railway the influence of the European powers rarely extended far inland. The railway permitted comparatively easy access to the hinterland; imperialists used railways to integrate and annex territory, and to exploit the resources of the regions surrounding the ports they controlled."

The political relations had been transformed by the colonial railways not only in colonies but also in countries and weakened empires (i.e. Latin America, The Ottoman Empire, and China). Construction of the railways increased economic and politic influence and pressures on minor countries

3 History of the India under British dominance is a convenient example. Railway construction policy of the Britain in Indian land was based on to connect the resources to world market by the ports, however inland connection, such as between two neighbour province, were consciously hindered. For further information: Orhan Kurmuş. *Emperyalizmin Turkiye'ye Girişi*. Ankara: Savaş Yayınları.1982 and Bilmez Bülent Can. *Demiryolundan Petrole Chester Projesi (1908 – 1923*). İstanbul: Tarih Vakfı Yurt Yayınları. 2000

and weakened empires. And they had to accept deviating levels of the dominance. For example, Ottoman Empire had to give special rights to the countries who constructed the railways in the Imperial land. Moreover, this became a determinant factor both in economic and political relations between the imperial powers.

Through the colonial railways, the economic processes, ideas and institutions of the Europe spread all over the world. This meant new production techniques, new legal arrangements and orders, new property ownership rights, new investment areas and new safety codes, the *development and civilization*. The terms related to “the development” were united with the technology and the railway became the most important symbol of the technology. Therefore, most of the countries were willing to have railways which would bring prosperity and successful national development. However, lack of financial sources and high cost of railway construction, were resulted in concessions including guaranteed fixed rate of profits between host country and the private European investors. In this way the governments fell into deep financial debt to European banks and stock exchanges (Coulls, 1999:4)

Bilmez Bülent Can (2000;8-24) defines this process as “European-centred modern standardisation”. He describes the Europe as an entire set of thought related with Europe rather than a geographical boundary. First, the European-centred modern paradigm was formed; this was the self-standardisation which was born in Europe, the continent itself. Then it started the spread out with the term of “civilization”. From this moment on “to be like Europe” became the criteria of success and development and the only way to do this was to exist in the capitalist world system created by Europe. The tools of this existence were to import the political, social, cultural, technological and military institutions. At the beginning, the railway was the most convenient tool among the others.

This situation resulted in various changes in societies; first of all, the social structure was re-organized due to new economic conditions. New working areas provided employment in masses. The labour stratification was

formed. Especially for the railway construction, huge amounts of human resources were necessary. This was the first time that the workers were working together under the same conditions, thus the labour class movements begin (Özyüksel, 2000;3).

The easy and cheap transportation, which was provided by the railway, also enabled population movements. The industrialised cities began to expand with the workers who came from provincial areas. The population of Manchester grew from 75.000 to 600.000 between 1801 and 1901. London reached to a size 5 times larger in the same period; from 1 million to 6½ million while Paris grew up to 3 million at the end of the 19th century. The fast interaction between cities resulted in modifications in the physical environment, especially city structures and architecture. The realized Haussman project for Paris is perhaps the most significant one among several ideal industrial town plans developed such as Fourier's "Le Nouveau Monde Industriel" in 1822, Ildefonso Cerdá's "Theoriá General de la Urbanización" in 1867 or Pullman's works on Chicago (Frampton, 1980:21-28).

Architecture also witnessed changes with the new technology and building types that never experienced before as mentioned by Kostof (1995;595);

> "The increasing use of iron and glass was shaking up traditional construction methods and animating feats of enclosed or traversed space. Not since the Roman invention of concrete had a building technology so radicalized architecture. And these new materials went to meet the functional needs of scores of building types – some urban, like banks, government offices, and the fashionable shopping arcades, others industrial. To this second class belong the architectural components of the major transportation systems – everything from tollhouses, docks and railroad stations to various kinds of bridges, viaducts, and engine houses – and industrial complexes like breweries and maltings, mills, factories, farmeries, and docks with attendant warehouses."

The railway had an important role in these achievements in architecture. The solutions for many structural problems to construct the brave designs, such as bridges or viaducts were developed with the railway construction. Stephenson and Fairbairn Britannia Tubular Bridge over The Menai Straits in 1852 (fig.1.7), and Brunel's Saltash Viaducts of 1859 (fig.1.8) are remarkable examples. Especially the influence of Brunel's works can be seen Gustave Eiffel's thoughts on The Massif Central at the end of the century.

Fig.1.7: Britannia Tubular Bridge
Postcard from the private collection of Jochem Hollestelle.
(http://www.structurae.net/photos/index.cfm?JS=30442, accessed on March 2005)

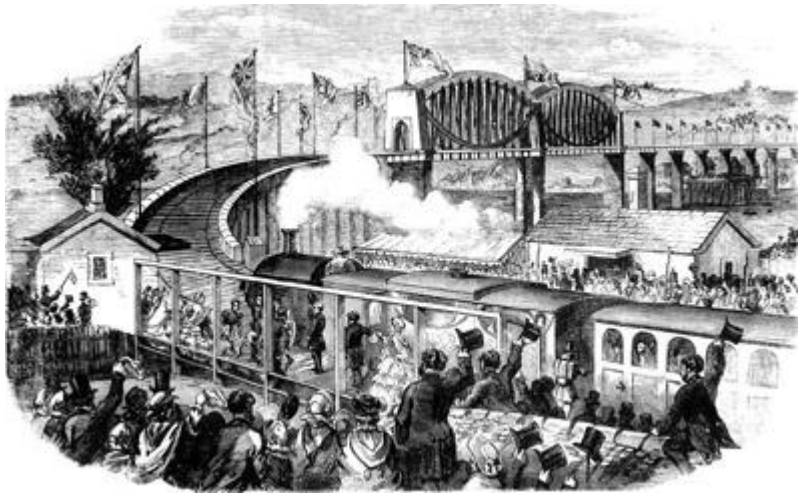


Fig.1.8: Saltash Viaducts and Bridge
(http://www.brantacan.co.uk/saltashbridge.htm, accessed on March 2005)

Yet the most important contribution of the railway to architecture is the iron. The cast and wrought iron were gradually integrated into general building structure vocabulary. This new construction material made the construction of wide span spaces required by industrial production possible (Frampton, 1980:32).

As mentioned by Frampton in 1980, the railway stations were important as remarkable glazed iron structures besides other buildings;

> "The first large permanent enclosures to be significantly glazed thereafter were the railway termini that were built during the second half of the 19th century, a development began with Turner and Joseph Locke's Lime Station Liverpool, of 1849-50.
>
> The railway terminus presented a peculiar challenge to the received canons of architecture, since there was no type available to express and articulate adequately the junction between the head building and train shed. This problem which saw the earliest architectural resolution in Duquasney's Gar

de l'Est Paris, of 1852, was of some concern since these termini were effectively the new gateways into the capital city (Frampton, 1980:33)."

Fig.1.9: Lime Street Station, Liverpool, 1849-1850 (http://jonathan.rawle.org/gallery/liverpool/limestreet, accessed on March 2005)

Fig.1.10: gar de l'est, façade (http://www.dewi.ca/trains/paris/est.html, accessed on March 2005)

Fig.1.11: gar de l'est, interior hall
(http://www.paris.org/Gares/de.l.Est/gifs/gare.de.l.est.hall.html, accessed on March 2005)

For approximately 100 years, the railway stations became the only gateways not only for capital cities but also the settlements where railway passes. They worked as the image of the cities with which the first impressions were made.

The golden age of the railways continued until the second half of the 20th century. During the two World Wars the railways were very intensively used (fig.1.12). After 1950's, a slow decline began in terms of route mileage. It occurred in parallel with the development in airway and highway. But, the technological achievements still continued in existing lines. A new age, for the railways began with the high-speed trains in the last quarter of 20th century. The Tokaido Line of Japan and TGV (Train à Grande Vitesse) of France were the forerunners of this new system. They are now the most important examples of high-speed express passenger transportation. Moreover, there are studies on developing a railway line between Europe

and America, which is passing through Atlantic Ocean in a special vacuumed tubular structure as an alternative of airway.

Fig.1.12: Gate Auschwitz II Birkenau (http://www.auschwitz-muzeum.oswiecim.pl/html/eng/start/foto/brama-birkenau.html, accessed on March 2005)

Table1.1: Chronological development of railways in the world including Ottoman and Turkish railways between 1600 - 1750

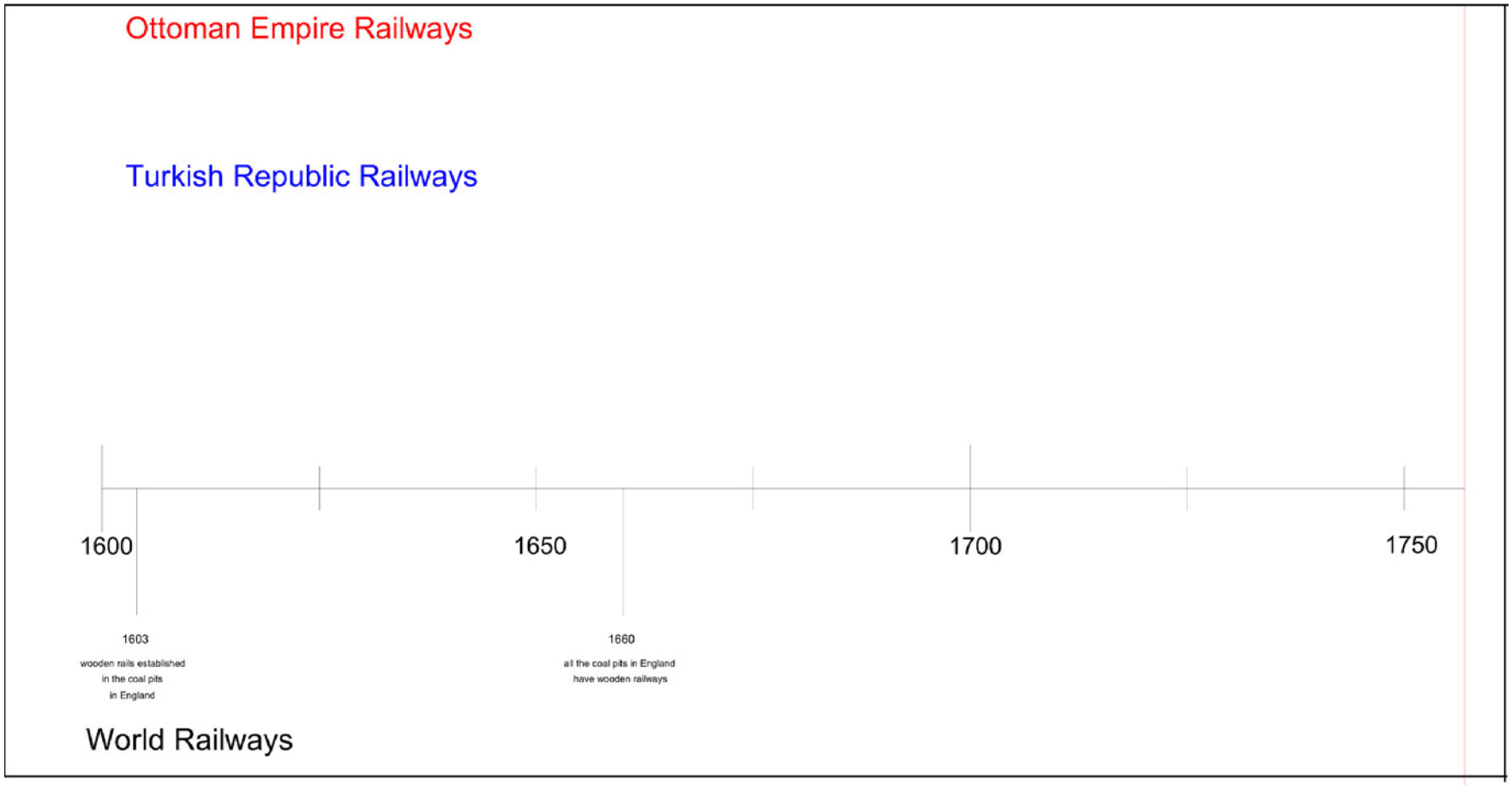


Table1.2: Chronological development of railways in the world including Ottoman and Turkish railways between 1750 - 1900

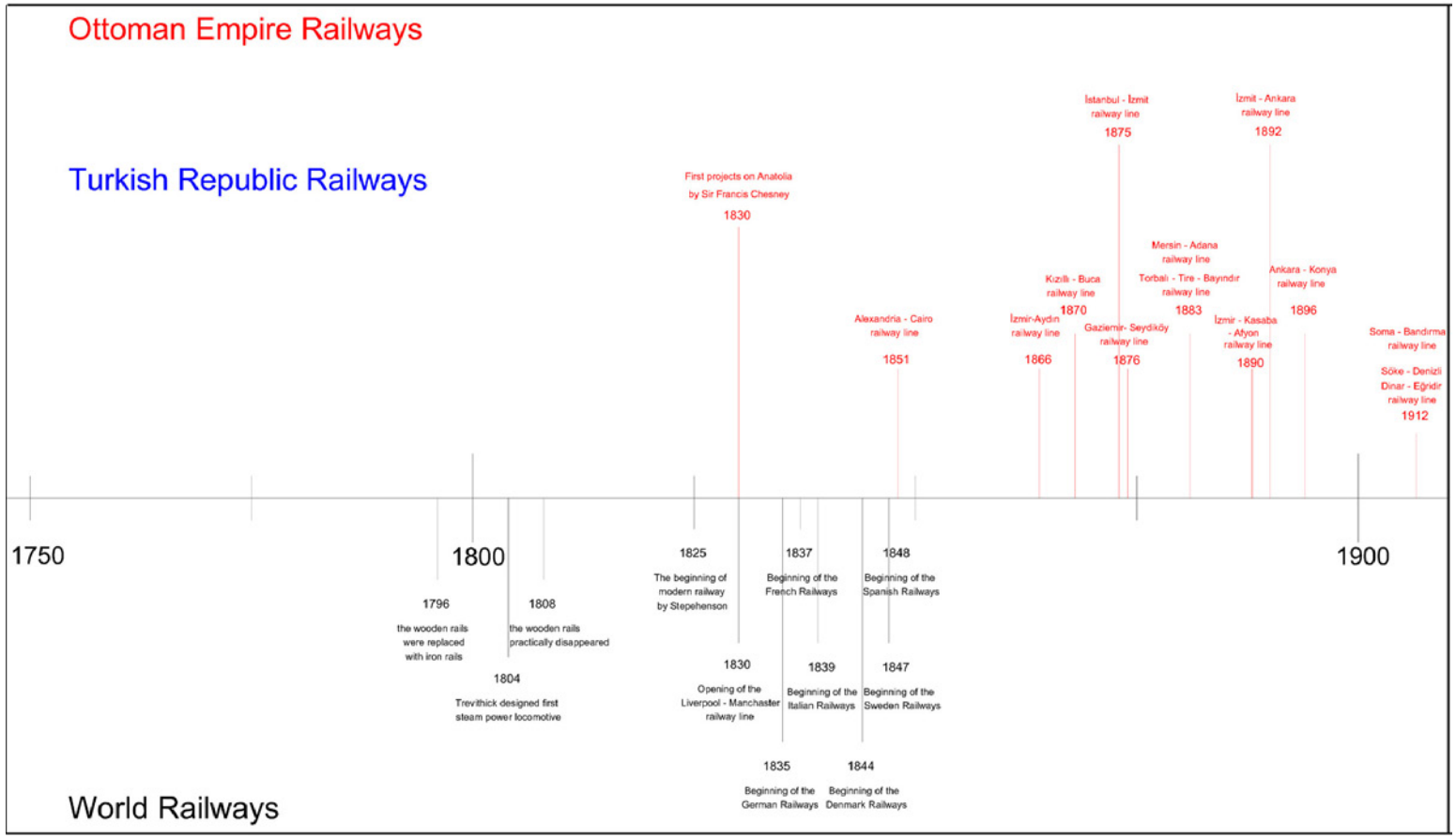
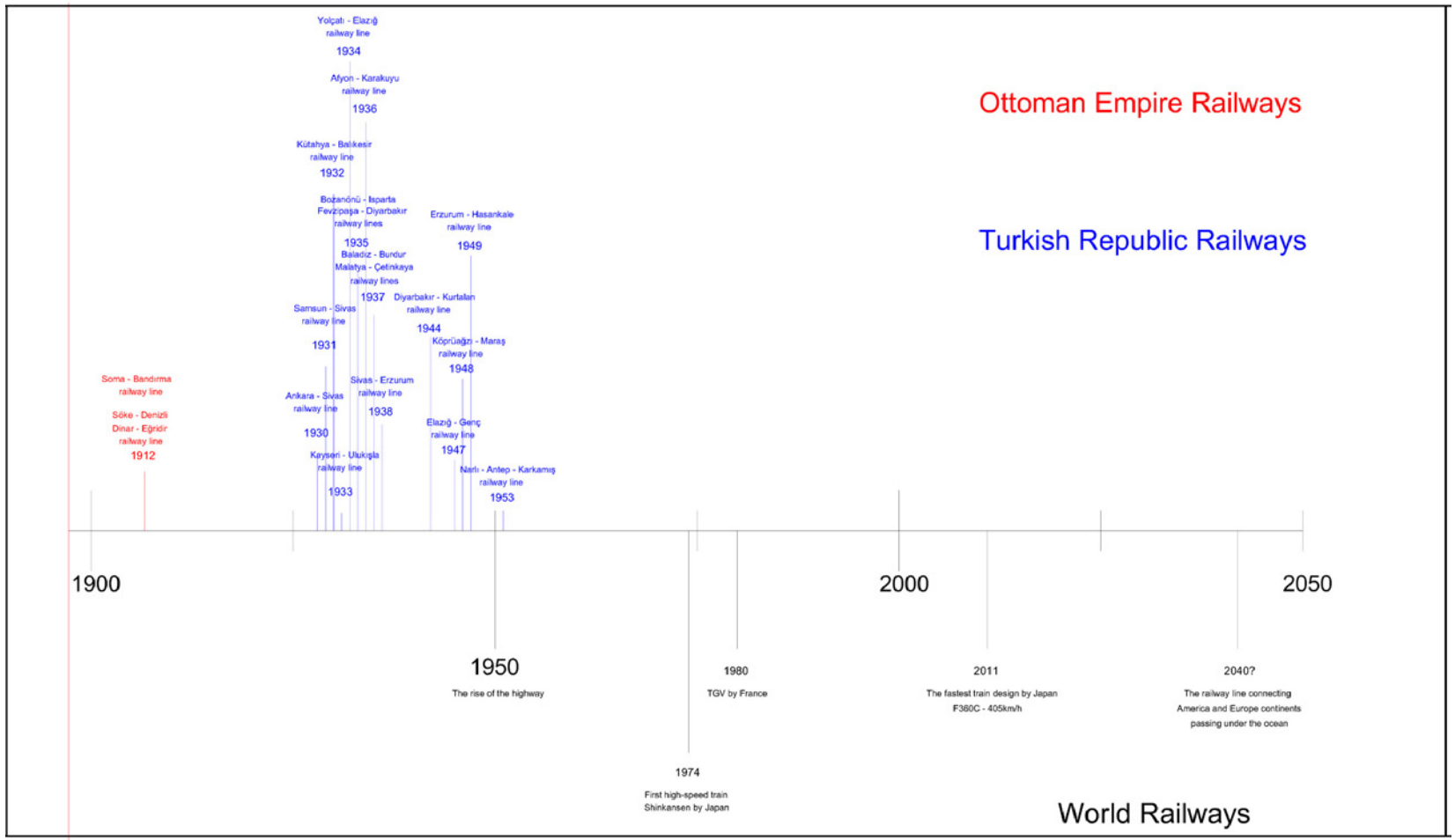


Table1.3: Chronological development of railways in the world including Ottoman and Turkish railways between 1900 - 2050



1.1.2. Railway and Ottoman Empire

Between 1851 and 1914 approximately 12.000 km of railway was constructed in the imperial land of the Ottomans. 4.000 km of 12.000 km was in the Anatolia, today's land of Turkish Republic. Other part of the lines was in Egypt, Iraq, Syria, the Arabian Peninsula and in Balkan provinces (Quataert, 1985:1630).

In the 19th century, Ottoman Empire was working on closing the distance between periphery and the centre. With the Westernization movement, several reforms were achieved by the Imperial Edict of the Rose Chamber (Gülhane Hatt-ı Hümayunu 1839) and the Imperial Edict of 1856 (Islahat Fermanı). European institutions were taken as model in the formation of new organisations. Especially the administrative system focused on the transformation of the traditional governmental structure to the centralised structure of European governmental system. In order to succeed this, it was believed that it was necessary to increase the control mechanism in the provinces (Ortaylı, 1983:88; Araz, 1995:5).

Technology was used as primary medium. Among other technological means, such as telegraph and factory system, the railway network construction was chosen as the tool to strengthen the government and the Sultan's power. Because of wars and rebellions, the authority of the government which was needed restructuring, had weakened. In addition to that, this weakness caused problems on the defence system, which was considered by the government as the second important issue to be reorganised. The use of railroad during the Crimean War in 1854 convinced the Ottoman Government to construct a railway network in Anatolia. Apart from the European examples of railway construction, the economic benefits were the last reason for the Ottoman Empire (Onur, 1953:10; Araz, 1995:9).

The first railway line in the imperial land was the Alexandria-Cairo line of 1851. It began to operate totally in 1854. This was an attempt of Britannia in creating a short way to India.

The first idea of the construction of the railroad in Anatolia appeared a few years after 1830. The British colonel Sir Francis Chesney was commissioned by the British government to research possibilities to shorten the way to India. The idea was to use Syria and Mesopotamia to reach to the Persian Gulf. The route around the Cape of Good Hope (Ümit Burnu) was long and costed too much. Moreover, there was not enough experience of using steam powered ships for such long journeys (Özyüksel, 1988:7).

Sir Francis Chesney focused on transportation with steam-powered ships on Euphrates and Tigris rivers. However, the rivers had been creating technical problems for ship transportation. Instead, Chesney proposed a railway connection from the Mediterranean Sea to Persian Gulf. Although, he succeeded to get concessions from Ottoman Government in 1857 and 1862, he was not able to realize his projects. There were two reason of this failure; first, the British Government was not willing to the project enough because of low tax guarantee proposed by the Ottoman Government. Secondly, the development of the sea transportation decreased the importance of the railway line. Meanwhile, the opening of the Suez Channel by the French caused changes in the plans of England.

The first railway construction in Anatolia began in 1856 and it continued until 1910. The constructions of the lines can be grouped under five headings according to the concessions given to the countries:

1. The British Railway Concessions (1856-1906)
2. The French Railway Concessions (1883-1910)
3. The Initiative of Ottoman Empire (1871-1875)
4. The German Railway Concessions (1889-1908)
5. The lines under the Russian Rule

The first railway concession was given to a British company for the construction of the İzmir – Aydın railway line and the construction was completed in 1866. Due to the financial crises and unpaid profit guarantee, the company acquired new concessions to construct the extensions of the İzmir – Aydın line. In 1870, Kızıllı – Buca and in 1876, Gaziemir – Seydiköy lines were connected to the İzmir – Aydın line. Moreover, Torbalı – Tire –

Bayındır lines and the extension of Sarayköy were finished in 1883. The concessions continued until 1906 with Ödemiş, Söke, Denizli, Çivril, Dinar and Eğridir, which began to operate in 1912 (Atilla, 2002:48).

In order to balance the British political and economic influence, Ottoman government gave new railway concessions to a French and German company. Meanwhile, a competition to gain the railway concessions of the Ottoman Government had already been started between these three countries. As a first attempt, a French company bought İzmir – Kasaba railway from a British Company and got its extension concession of the line until Afyon, by the help of German politicians. These lines were completed in 1890. Moreover, in 1910, a new concession was granted to a French company to construct the line between Soma and Bandırma. The line started to operate in 1912 (Atilla, 2002:46-90; Araz, 1995:13).

There is another concession of Mersin – Adana line in 1883; it was granted to an English group that sold it to a Frenchman; Baron Evain De Vandeuvre. An international company was established with British, Turkish and French partners. The line was completed in 1886 and in 1906 it was sold to Baghdad Railroad Company and became part of the Baghdad railway under the German concession (Araz, 1995: 14).

In 1871, the Ottoman Government decided to handle railway construction by itself. There were several reasons for this decision; one of them was the increased influence of Britannia and France through the railway. Another one was the lack of confidence in private enterpreneurs with unfinished Balkan railways. The project of railway construction to connect İstanbul to Anatolia began in 4 August 1871. In 1875, the line reached to İzmit. With the bankruptcy of the Ottoman economy the project was left unfinished.

After the realization that private capital to finish the project was necessary, search for a country to cooperate began. Germany seemed to be

the best choice as having a “better” position than France and Britannia[4]. The Deutsche Bank gained the concession including the right to buy the existing line between İstanbul and İzmit. The line reached Ankara in 1892 and Konya in 1896. In 1903, another concession was given to The Deutsche Bank to extend the line until Bagdad. However, the line was never finished except some parts after Konya, on Tauros and Amanos Moutains (Özyüksel, 2000:18-27).

Different than these concessions, the Kars – Hudut line and Kars – Erzurum lines were constructed during the invasion of Kars province by Soviet Union.

In the First World War, the railway limited in services to the Ottoman Empire. Even during the Independence War, Turkish army was not able to properly use the Ottoman Railways because of the Occupation Forces which held all railways. After the opening of the Grand National Assembly (Büyük Millet Meclisi,B.M.M.), the railway, left by the Occupation Forces, was confiscated by the new Turkish government (Yıldırım, 2001:24).

After the establishment of the Turkish Republic, railway was considered as the main issue of economical and transportation policy. Between 1924 and 1948, the national railway network was at the first place in the agenda of the governments. During this period, the national railway policy developed in two ways: first the construction of the new railways was initiated. Three thousands five hundred seventy nine km of new railway was added to the former Ottoman railways until 1950. Secondly, the Ottoman Railways, which belonged to different railway companies, were bought by the Turkish State (Yıldırım, 2001: 42 – 44).

In 23 May 1927, Turkish State Railways was established by the Act numbered 1402. The management of the national railways, except the foreign company railways, has been gathered under one institution (Yıldırım, 2001:139).

4 The policy of Britannia and France was changed at the last decade of the 19th century. After 1880’s the division of the Otoman Empire became the policy of these two imperial power. Especially the balkan countries started their independence wars with the English provocations.

The purchase process of the Ottoman railways was completed in 1948 as listed below:

- In 1924, Anatolian railway and Adana – Mersin railway line constructed by a German railway company,
- in 1930, Mudanya – Bursa railway constructed by a French railway company,
- in 1934, İzmir – Kasaba (Turgutlu) railway and in 1935 İzmir – Aydın railway constructed by a British railway company,
- in 1948, Baghdad railway constructed by a German railway company were bought by the Turkish government on the long term instalment plans (Yıldırım, 2001:140 – 144).

After 1950, the transportation policy of the Turkish State changed. The importance of the railway decreased due to the construction of the highways. After that date, except the renewals, only 330 km new railway line was added to the national railway network. According to the TCDD (Turkish Republic State Railways) records, the ratio of the railway in the whole national transportation diminished to 6% while it was approximately 90% in 1948 (Sönmez, 1997:8).

These policies hindered the development of the railway in Turkey. When compared with the European countries, Turkish railways are very old in every aspect, from technology to services and facilities. The actual potential of the railway is not being used. While the highway transportation was developed during the last 50 years, it brought its economic and social problems. Therefore, the railway transportation is still the feasible solution for the problems created by the highway transportation, in both economic and social way.

1.2. A Review on Conservation of Railway Heritage

The term of “Railway Heritage” comprises the rich treasuries of railway archives, buildings such as railway stations, train sheds, maintenance buildings and railway works, signalization structures, technical equipments of

any kind related directly or indirectly to railway, major structures of bridges, viaducts which are united with the landscape and minor artefacts that nevertheless convey the local distinctiveness of various companies such as clocks, benches and other furniture (Burman, 1997:18)

The conservation and railway are not separate fields. In fact, in many countries, there are railway fans interested in on technical part, especially to the steam power engines and locomotives. They deal with the conservation and restoration of the locomotives and special technical instruments. In addition, there are lots of locomotives and rolling stocks designated as national monuments in several countries (Coulls, 1995:5, Burman, 1995:19). For example in Turkey, there are two locomotive museums; one in Ankara and one in Çamlık – İzmir. The rolling stocks with which Atatürk made his national trips are also conserved (fig.1.13).[5]

Fig.1.13: The old logo of TCDD in Atatürk's rolling stock

5 Two important rolling stocks of Atatürk are in Ankara and İzmir. Especially, one in Alsancak Gar is unique with its special design. However, these rolling stocks are closed to visit.

The immobile elements have also become an important issue in conservation field. However, they are seen as singular elements like the mobile elements instead of a consideration within the context of heritage. A few stations, *terminis* (the stations at the end of the line), which are important structures of the major cities were handled as historical monuments such as the Manchester Central Station, King's Cross Station in London or Gar de l'Est in Paris (fig.1.14).

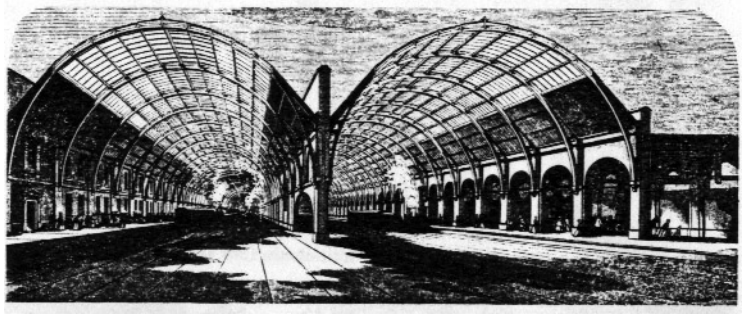


Fig.1.14: King's Cross station in London

Cosson mentions the approach towards the railway heritage as follows:

> "In some respect it is this nostalgia for the railway, and especially the steam railway, that prevents us as a nation from taking sufficiently seriously the recording and preservation of its history and heritage. The material evidence the origins and subsequent development of the railway is not properly regarded by the population at large in the same context as those aspects of our past that we commonly perceive and value as heritage. Nor are the standards of scholarship of the conservation that would be taken for granted in the fields of, say, Roman archaeology or the care of historic buildings applied with similar rigour in the case of the railway (Cossons, 1997:5)."

This was true until the mid 1990's although the international base of the context was has almost completed. The international documents related to conservation and historical heritage show the context.

In the Venice Charter of 1964, in Definitions Article 1, (eds.Madran & Özgönül, 1999:31) the definition of the historic monument is important due to the its content;

> "The concept of an historic monument embraces not only the single architectural work but also the urban or rural setting in which is found the evidence of particular civilization, a significant development or an historic event. This applies not only to great works of art but also to more modest works of the past which have acquired cultural significance with the passing of time."

As a milestone, Venice Charter pointed to the importance of the context which shaped the conservation and restoration areas since its declaration. Moreover, the definition above opened up the way to the conservation of architectural heritage in a broader context.

In 1975, the year of the European Architectural Heritage, the studies on historical environments and their preservation were examined in detail. At the final recommendation of The European Charter of the Architectural Heritage of the same year (eds.Madran & Özgönül, 1999:156) it was declared that;

> "The architectural heritage is an expression of history and helps us to understand the relevance of the past to contemporary life.
> …this heritage should be passed on to future generations in its authentic state and all its variety as an essential part of the memory of the human race. Otherwise part of man's awareness of his own continuity will be destroyed.
> …each generation places a different interpretation on the past and derives new inspiration from it. This capital has been built up over the centuries: the

destruction of any part of it leaves us poorer, since nothing new that we create, however fine will make good to loss.

Our society now has to husband its resources. Far from being luxury this heritage is an economic asset which can be used to save community resources."

After that year, the architectural heritage definition began to incorporate the new studies on built environment in architectural and historical contexts as well as the technical and social contexts. With these studies, the concept of industrial heritage entered in the concept of architectural heritage and conservation field. In 1977, an exhibition was held in RIBA Heinz Gallery entitled as "Off the Rails; Saving Railway Heritage" by SAVE Britain's Heritage (Burman, 1997:18). This was the first time that railway buildings were examined with the same seriousness in its context like any other building categories that were already considered as important architectural heritage. However until 1990's, railway heritage was accepted as a point of Industrial Heritage. Burman, (1997:18) states that the exhibition demonstrated the potential of the railway structures and buildings to be adapted to new uses without loosing thereby their associational or cultural values.

The industrial heritage and its conservation was also mentioned with in the *Resolutions of the IInd European Conference of Responsible for the Architectural Heritage of 1985 in Granada*. In this resolution (eds.Madran & Özgönül, 1999:293) the protection of the "technical and industrial architecture and 19th and 20th century architecture together with their environment" was pointed out as given in the paragraph below:

"RESOLUTION NO: 2

On the Promotion of the Architectural Heritage in Socio-Cultural Life and as a Factor in the Quality of Life

A. ADOPT THE CURRENT WIDER CONCEPT OF THE ARCHITECTURAL HERITAGE IN THEIR CONSERVATION POLICIES:

i. by extending the categories of assets due for protection to cover examples of vernacular, rural, technical and industrial architecture and 19th and 20th century architecture together with their environment;
ii. by commissioning studies on a European scale of the chronological, qualitative and typological criteria appropriate to this wider concept;

After the Granada Resolutions the importance of conservation of Industrial Heritage has strengthened with the Recommendation No.R (90) 20 of CE (Council f Europe) in 1990 (eds.Madran & Özgönül, 1999:377) as given below:

> "The rapid development of industrial civilization, the new types of production and employment resulting from the recent economic crises and technological explosion which is typical of our age and society, have lad far - reaching upheavals in whole sectors of industrial activity, with the consequent major changes in urban and suburban landscapes involving the sometimes total disappearance of buildings, installations of vestiges of industrial activity. Today, Europe is becoming aware of the technical, cultural and social value of this heritage as a whole which an important part of the collective memory and European identity, some of whose elements deserve to be protected as part of the heritage."

These resolutions and declarations were followed by several conferences focusing on the industrial heritage conservation.[6]. The impacts of these discussions began to be felt during the last decade of the 20th century and some important conservation and restoration projects related to industrial heritage were realized. The two major projects are the restoration

6 Between 1985 and 1990 a set of conference was held all over europe. Some of them are; "The industrial heritage, what policies?" Lyon – France, "Engineering and public works: a new dimesion of the heritage" Madrid – Spain, "Mining engineering monuments as a cultural heritage" Bochum – Germany, "Recording the industrial heritage" Durham – England.

of the 18th century Gas Factory in Vienna and the restoration of old Electric Factory which was opened as Tate Gallery in London (fig.1.15 and fig.1.16).

The increased interest towards the conservation of industrial heritage reflected to the railway heritage. England is the pioneer country for the conservation of railway heritage just as it was the pioneer in establishing railways. The first institution established in 1984 to designate, document and conserve the railway heritage was the “Railway Heritage Trust” (Soane, 1997:142). In 1993, the railway act was transformed for the sake of preservation in England. According to this act, a railway heritage committee to designate the records and artefacts (or classes of records and artefacts) which are historically significant, was formed with the collaboration of National Railway Museum that was founded in 1975 at York, The Ministry of Transportation and Railway Heritage Trust (Threlfall, 1997:168). After three years, in 1996, Railway Heritage Act was declared. Other countries of Europe as well as The United States, Canada and Australia formed their institutional and legal background after England.

Fig.1.15: Tate Gallery, restored in 2000 by Herzog – De Meuron Architects (http://www.galinsky.com/buildings/tatemodern/, accessed in March 2005)

Fig.1.16: Vienna Gasometers, restored in 1995 by four architects; Coop Himmelb(l)au, Jean Nouvel, Manfred Mehdorn, Wilhelm Hozlbauer (http://www.arcspace.com/architects/nouvel/, accessed in March 2005)

In 1999, ICOMOS published a book entitled “Railways as World Heritage Sites” in order to draw the attention of the World Heritage Committee. This book introduced the criteria proposals for internationally significant railways, therefore is a very significant work. Indeed, these criteria are also valid for the designation of the national railway heritage. According to this book the criteria that should be considered in designation of the railway heritage are;

1. A creative work indicative of genius
2. The influence of, and on, innovative technology
3. Outstanding or typical example
4. Illustrative of economic or social developments (Coulls, 1999:8-11)

The railway heritage and above mentioned criteria can be discussed within the recent debate focusing on conservation of intangible values. This debate is based on the necessity of taking into consideration the “unmeasured non - material values” as important as material values in

conservation practice.[7] This aspect is pointed out by Tomaszewski (2003:2) as below:

> "The non – material value is considerably more important in connection with the period of 'life' of the work of architecture (historical monument). Architecture creates the spatial setting for facts and events of local, national or interregional significance. The greater the importance of the event, the greater its impact on public awareness will be and on the degree to which it is recorded in the annals of history and in social memory."

In fact the conservation of railway heritage has to be considered with this dimension due to its nature as is to be clarified in this chapter. The material values which consist of the technical part of the railway, are the physical reflection of the whole context. To eliminate the social part in analyzing the railway means demolishing the essence of the railway. Because, the experience of the railway created a basic emotional revolution in the public life. Besides the whole history, political and economical effects, the perception of the railway is based on the experience of feeling and listening the rocking of the wagons, the sound of the rails and the rhythmic noise of the locomotives. In social memory the emotion of the railway is as important as the other sociological elements. Therefore, the "museumisation" of the railway heritage is to break the context, which is important in terms of the meaning of the railway.

On the other hand, the conservation of railway heritage in Turkey is in a problematic situation. Although the law of preservation of the cultural and natural heritage, numbered 2863 includes the scientifically important immovable objects within the cultural heritage, however there is no specific definition for either industrial or railway heritage. The law defines a time limit, which is the end of the 19th century, for architectural heritage designation.

7 One of the sub - theme of 14th General Assembly and Scientific Symposium of ICOMOS, held in Zimbabwe in 2003, is "Intengible Dimension – Concepts, Identification and Assesment". The papers of the conference were open to access from the web site; http://www.icomos.org

The new law numbered 5226 keeps this time limitation and it does not bring specific definition for the presentation of industrial and railway heritage. So, according to current legal situation it can be stated that industrial and railway heritage is not considered yet.

The same attitude is observed in the principle decisions of the High Preservation Council. But, one of the principle decisions which was taken in 5 November 1999, has importance as it mentions the designation of buildings owned by the state institutions . Another important decision is the designation of the Ankara Gas Factory. Ankara Gas Factory which was closed in 1989, is one of the early industrial building example of the Turkish Republic. Ankara Preservation Committee designated the factory in 1991. However, this decision created a discussion between the Preservation Committee and Electric, Gas and Bus Affairs of Ankara City Municipality (EGO) which wanted to demolish the building.

Still, the railway stations and auxiliary buildings in Turkey have been registered according to the Preservation Act Numbered 2863 and the principle decisions of the High Preservation Committee through the Regional Preservation Committees. The important structures which are situated at the city centres such as Alsancak *termini,* are registered. However small stations in local municipalities are in danger as they are not registered yet and they are under pressure of local demands in which opening new roads or to built new stations become reasonable for municipalities.[8] The lack of policy and legal measures give the burdened the regional preservation committee to take responsibility and use their own initiative.

The owner of the railways and the station buildings is in the Turkish Republic State Railways (TCDD) and this institution is responsible for the conservation and maintenance. Organisation and application of repair and maintenance is done by the *Building Department* of TCDD. If a registered building need comprehensive restoration, than this duty is done by the

8 Some of the stations of İzmir – Aydın railway line and İzmir – Turgutlu line were registered as a result of these situations. Detailed information can be gathered from the İzmir 1st Presevation Commitee and İzmir 2nd Preservation Committee archives.

Building Department by delegating the job to the private sector who will at the same time be responsible to prepare a proper restoration project and to get an approval from the Preservation Council.

Another task of the TCDD is to rent the unoccupied stations and auxiliary buildings for various functions. However in practice, this refunctioning process damages the historic buildings as the renters mostly make inappropriate repairs and use them for unsuitable functions to them. Gazi Station in Ankara which was refunctioned as a restaurant and the Mudanya Station in Bursa, which was transformed to a hotel are good examples to these improper applications (fig.1.17 and fig.1.18).

Fig.1.17: Gazi Station İn Ankara after restoration
(www.darüzziya.com/ankara.htm, accessed in April.2005)

Fig. 1.18: Mudanya Station after restoration (www.mudanya.gov.tr, accessed in April 2005)

1.3. The aim and Scope

The railway heritage conservation is a neglected topic in Turkey. However, the number of studies concerning the railway, especially the ones related with the history of the development of railway in the Ottoman Empire and Turkey, has been increasing during the last five years. Creating a vision considering the social and physical features and formation of a national policy for the conservation of railway heritage, which will define the future of the railway heritage in the country, is a necessity for Turkey.

Bearing in mind the above-mentioned problems, this thesis was developed aiming at describing and presenting the situation and problems in railway heritage conservation in Turkey, and defining an approach for the conservation of railway heritage on a selected example by taking into consideration the current international discussions.

However, the lack of information and tools resulting from the recent introduction of “railway heritage” as an area, absence of necessary legal means, limited number of studies on railway history and railway architecture, difficulties in finding sources and documents and the lack of models

developed for conservation of railway heritage are among the limitations of this thesis.

As it would not be realistic to comprise all these research topics, which requires detailed and long-term studies, the scope of the thesis is limited to making an assessment about the current status of “railway heritage conservation” both in international and national level, then accordingly, to develop an approach, which can lead further studies on protection of railway heritage İzmir - Aydın railway line is selected as case study.

The reason of the selection of İzmir - Aydın railway line is that it was the first railway line in late Ottoman period, and it is still very important for the history and development of the railways in Turkey. Moreover, it has a special place in Ottoman Empire history as well as in the history of Europe.

In local scale, the line has changed the Aegean region in terms of history, economy and public life. From architectural point of view, the stations and the buildings of the line are very important, as they were the first examples, in terms of architectural history of the Turkey. Therefore, the line includes the basic elements of the national railway heritage.

The scope of the thesis is limited to define the basic principles for the conservation of railway heritage while focusing on architectural features and conservation problems of İzmir - Aydın railway line.

1.4. Methodology

Since the railway is a complex entity and the railway heritage conservation is a recently developing topic in Turkey, the thesis aimed to point out various layers of the railway, which are mentioned in the introduction section. Conceptually, this study attempted to approach the problem of railway heritage conservation considering the technical and socio – economical aspects.

In view of this, the first chapter focused on the definition of the railway, its components and history. Meanwhile the concepts related with the

conservation of railway have been reviewed. Moreover, the development of railway in Ottoman Empire and its importance are tried to be explain.

In the second chapter, the historical, geographical, economical, social and cultural context as well as the architectural features of the İzmir – Aydın railway are described. This context is examined within two time period; first in the construction time and the second, in the current situation. Moreover, the architectural characteristics, structural systems, building conditions are the main topics explored in this chapter.

In third chapter, the potentials and values of the line are examined according to information presented in second chapter. The evaluation are grouped and given into two parts; one for general context and other for building complexes specifically.

In fourth chapter, a conservation approach is developed presented and discussed parallel to the conclusions derived according to general and architectural evaluation. The conservation principles and proposal details are shown in this chapter.

Being the first railway line in Anatolia and having important architectural values, İzmir – Aydın railway line is an interesting topic representing several conservation problems. Starting from this interest, this thesis is developed as the first study dealing with railway heritage conservation in Turkey. Because of that the methodology of this thesis was developed while making the both site and literature survey. As a result, the definition of the problem, the scope and the methodology of the thesis were developed as parallel processes.

During the literature survey a conceptual framework was tried to be formed. The extent of the concept and time restrictions for a master thesis forced the author the define limits. Considering the all aspects affecting the conservation of railway heritage, special emphasis is given to the architectural features.

Within this scope, the collection of information was accomplished into two stages; the literature survey and the field survey. During the survey, it was not possible to reach the architectural sources about the İzmir – Aydın

railway line since there was not any documents. As a result, field survey was mainly directed to collect information about the buildings.

During the literature survey, besides the libraries of METU and Bilkent University, the archives of TCDD Museum, TCDD 2nd and 3rd regions directorate was searched. TTK library, the Archives of Prime Ministry and Centre of British Archaeology also are the searched centres. In addition to that the theses related to topic were collected from YÖK library.[9] In total five master's thesis were found; four of them are related to railway station architecture while one is related to history of the İzmir – Aydın railway line. However, there is no study about the conservation of the railway heritage. Although the e-mail correspondence is tried to establish with British Museum and British Railway Heritage Committee, no response can be gathered from these institutions. The results of the literature survey are presented especially in the introduction and the second chapter.

According to the literature survey, the set of information to be collected in field survey was defined and three survey forms were prepared. Then the buildings were examined with the use of these survey forms. The intention is given to the architectural features. The first survey form, titled E, aims at examining the exterior parts, structural system, construction materials, structural deformations, material decay, alterations and architectural elements (Appendix A).

9 The thesis that available in the YÖK library are;

Araz, Melda. (1995). Impacts of Political Decisions In the Formation Of Railroads and Railroad Architecture. Unpublished M. A. Thesis in Department of Architectural History: METU Institute of Social Sciences. Ankara

Sabutay, G. Lale Çoygun. (1996). Türkiye'de İstasyon Yapılarının Geçmişten Günümüze Değişimi. Yayınlanmamış Yüksek Lisans Tezi, Gazi Üniversitesi Fen Bilimleri Enstitüsü, Ankara

Koçer, Şule. (1995). Haydarpaşa-Gebze Demiryolu Hattında 19. yüzyılda Yapılmış Demiryolu İstasyon Binaları. Yayınlanmamış Yüksek Lisans Tezi, İstanbul Teknik Üniversitesi Sosyal Bilimler Enstitüsü, İstanbul

Uzuntepe, Gülçin. (2000). Osmanlı İmparatorluğu'nda İlk Demiryolu: İzmir – Aydın - Kasaba (Turgutlu) (1856 – 1897). Yayınlanmamış Yüksek Lisans Tezi, Anadolu Üniversitesi Sosyal Bilimler Enstitüsü, Eskişehir

Şenyiğit, Özlem. (2002). Adana - Mersin Demiryolu Hattı Üzerindeki İstasyon Binalarının Tarihi ve Mimari Analizi. Çukurova Üniversitesi Fen Bilimleri Enstitüsü, Adana

The second survey form, titled I, aims at examining the interior spaces of the buildings. It is aimed to investigate the finishing material of the spaces, alterations, conditions and functions of each space in the buildings (Appendix A).

The aim of the third survey sheet which is a questionnaire aims at collecting information from the officers of TCDD. In each station, the interview was held with the chief of the station or the officer who has been working for a long time at the station. Especially, the questions were chosen to understand the thoughts, experience and the knowledge of the officers about the buildings (Appendix A).

The field survey was completed in three visits done between spring and fall of 2004. In the field survey, for each station, except Sağlık, Develiköy and Pancar, stations which were not able to be examined, and each building, a set of survey sheets was used. Sketches of site plan, floor plans, platform views and façades were made. Moreover, the detailed photographic documentation of the stations was prepared. The information gathered through site survey is presented in Chapter II, while the detailed documents and drawings prepared for each station are given in the thesis' Appendix.

For the evaluation, the information gathered from literature survey and field survey was classified according to the stations. This information was cross checked to understand the original line, the original location of the stations and the reasons for selection of the locations. Furthermore, the values and potentials were clarified to define the method for conservation proposal.

The methodology of the thesis was defined and developed during the thesis. There are several reasons; firstly there are many few works in the world considering the conservation railway heritage since it is new topic while this is the first example in Turkey. Secondly, during the field survey and literature survey the complex structure of the railway was discovered and it affected the content during the study.

As a result, the railway is considered as whole including whole its layers which can not be separated even for analytical purposes. These layers are shown in the second chapter. The evaluation and proposal was formed in terms of this unity while the focus of the study is architectural features

CHAPTER 2

FEATURES OF İZMİR – AYDIN RAILWAY LINE

2.1. General Features

2.1.1. History: First Railway Concession by English; İzmir – Aydın Railway Line

The Aegean region was important for British merchants due to İzmir seaport, which was the gate of the productive hinterland of the west Anatolia to the Mediterranean Sea (Özyüksel, 2000:7). Before the beginning of the construction of the railroad, there were already 1061 British merchants, who have been dealing on imports and exporting (Kurmuş, 1982:57).

1838 Baltalimanı Trading Pact is one of the most important breaking points in the relations of Ottoman Empire with England as described below by Issawi (1966:38):

> "By the early 1830's the Ottoman government was trying to renegotiate the Anglo-Ottoman tariff treaty of 1820, which was due to lapse in 1834. Its objective was to raise the basis on which taxes were levied, in view of the general rise in prices, and also to protect its woollen handicrafts against the rapidly increasing foreign competition. For their part foreign, especially British, merchants complained of export prohibitions, of very high duties on exports – amounting on certain items to 33 per cent – and of the fact that they were being subjected to the same taxes as Ottoman subjects when they moved their merchandise into the interior; formerly, foreign merchants did not go beyond the ports and therefore did not have to pay internal duties."

After the 1838 Baltalimanı Trading Pact, the regulations, the preventions to import goods and the inner taxes were cancelled. Therefore, to enter the

Ottoman Market and to import raw material became profitable and easy for foreign merchants, especially for the British. This pact was the first step to eliminate the old existing constitutions and to establish new social and economic structures. The Ottoman reformists believed that, these new regulations would accelerate the Westernisation movement. However, this situation caused discontent of a large part of the population. The agriculture policy changed according to the pact. The agricultural production was focused on industrial plants like cotton and tobacco which were oriented towards exportation. On the other hand, the import goods damaged the local handicrafts. As a result, an economical regression occurred in mid 1850's (Ahmad, 2002:40).

At the same time, the Aegean region was not quiet due to disagreements between the local ethnic groups. Moreover, the government was in need of transferring the military force to stop the Zeybek, Yörük and Çerkez gangs (Kurmuş, 1982:73).

From the British point of view, the region and transportation within the region had importance due to two reasons:

1. The need for raw material for the industry and the region's potential to cover this need
2. The necessity of selling and distributing cheap industrial goods in Anatolia.

The British merchants were sure that if proper transportation network was not established it would not be possible to achieve these. Because, the traditional good transportation with camels had problems; the limited capacity with high transportation cost was making the trade difficult. The goods and products could be damaged during the trip to İzmir. Meanwhile there were not enough camels to carry the products (Kurmuş, 1982:32).

Under these circumstances, a British group, Robert Wilkin and three partners, who were merchants in İzmir, obtained the first concession in 23 September 1856 to build a railroad from İzmir to Aydın. However, such a big attempt needed a huge amount of capital. Neither the Ottoman Government nor the British merchants had enough economic power to carry out the

financial problems of the railroad construction successfully. As a result, the concession was sold to another British group in England. This group set up a company named “The Ottoman Railway From Smyrna to Aidin” in May1957. The founders of the company were Sir Joseph Paxton, George Whytes, Augustus William Rixon and William Jackson from the House of Commons (Atilla, 2002:56).

According to the contract of railroad construction, the Ottoman Government guaranteed 6% profit per year for the capital of the 1.200.000£ to the company. It was valid for 50 years. In addition to that, the company had the rights to make use of the lands, forests and natural resources in 45 km band around the line. The company had the right to construct paved road in this band. The telegraph lines had to be installed with railway line and one of them had to be given to the Ottoman government. The needed land on which the line was constructed was given to the company for free. The Ottoman Government had right to confiscate the railway line if the company stopped the construction for more than 6 months. Yet, the company could request additional time in order to overcome the tunnel construction problems (Atilla, 2002:58).

The construction of the railroad had three stages (fig.2.2); first stage of the line, which was passing on plate land, was between İzmir and Aydın Mountains. This was the 70 km of the total length, which is 130 km. The second stage was composed of a tunnel, which was passing through Aydın Mountains. The last stage included the line from the tunnel to Aydın. However, during the construction, the second stage of the line was changed due to technical problems. It was decided to pass the line around the mountain instead of opening a tunnel through it (Kurmuş, 1982:38).

In 28 September 1857, the foundations of the line were laid. The railway company had to deal with many problems, both economic and technical.

This caused shifts in deadlines. The line started to operate completely in 1 August 1866, with 6 years delay. [10]

Although the company could not complete the line in agreed timetable, the Ottoman Government did not impose sanctions because the completed line was very important. Before its economic benefit, to obtain political union was more important. In fact, under all the railway concessions that were given by the Ottoman government there was this basic thought. The ethnic groups which started an independence struggle as a result of close relations with Europe, and the activities of missionaries, had effects on the Ottoman government in two ways; first the Ottoman government used the European methods and instruments, such as railway, to solve the disintegration problem. The second was that all efforts to diminish the nationalist movement of ethnic groups gave rise to the Ottoman nationalism in reaction. In fact, the solution was the reason and catalyst of the problem, but the Ottoman government could not notice this for a long time (Can, 2000:46).

Still, the economic benefit was not undervalued. Ottoman government was sure that with railway the production and trading activities would be augmented therefore, the tax income would increase. As a matter of fact between 1856 and 1909 the collected agricultural taxes increased 13 times more. Moreover, the port of İzmir became the second biggest port after İstanbul. The custom income reached 12% of the total custom income (Kurmuş, 1982:49). This rising economic attractiveness of the west Anatolia in parallel with the railway construction enlarged the competition between England, France and Germany. By the 1880's the concessions that French companies got, had weakened the English economic and political influence. Especially at the end of the 19th century, the German and the French companies got superiority in the region (Kurmuş, 1982:162-163).

10 The main issue were about economic instability of the Railway Company. Insufficient capital, inappropriate spending, impropriety were the main problems. For further information; Orhan Kurmuş. *Emperyalizmin Turkiye'ye Girişi*. Ankara: Savaş Yayınları.1982, Charles Issawi. *The Economic History of the Middle East* 1800-1914. Chicago: The University Of Chicago Press. 1966:38 and Bilmez Bülent Can. *Demiryolundan Petrole Chester Projesi (1908 – 1923).* İstanbul: Tarih Vakfı Yurt Yayınları. 2000

There were several social impacts of the railway; first was that external the economic powers began to regulate the daily life of the closed Ottoman society. This caused the a rising disquiet. New sub-cultures appeared such as white - collar officers. The Ottoman society met with new life styles and new consumption methods. The summer resorts started to emerge in near vicinity of the centres, especially near İzmir; Seydiköy and Gaziemir are two examples (fig.2.3). With the railway line, the little provincial settlements were connected to the centres; the province population had close relationship with both themselves and the developed city population.

This line is composed of 17 stations (fig.2.1). These are:

1. İzmir - Alsancak
2. Hilal
3. Kemer
4. Şirinyer
5. Gaziemir
6. Cumaovası
7. Develiköy
8. Pancar
9. Torbalı
10. Tepeköy
11. Sağlık
12. Selçuk
13. Çamlık
14. Ortaklar
15. Germencik
16. İncirliova
17. Aydın

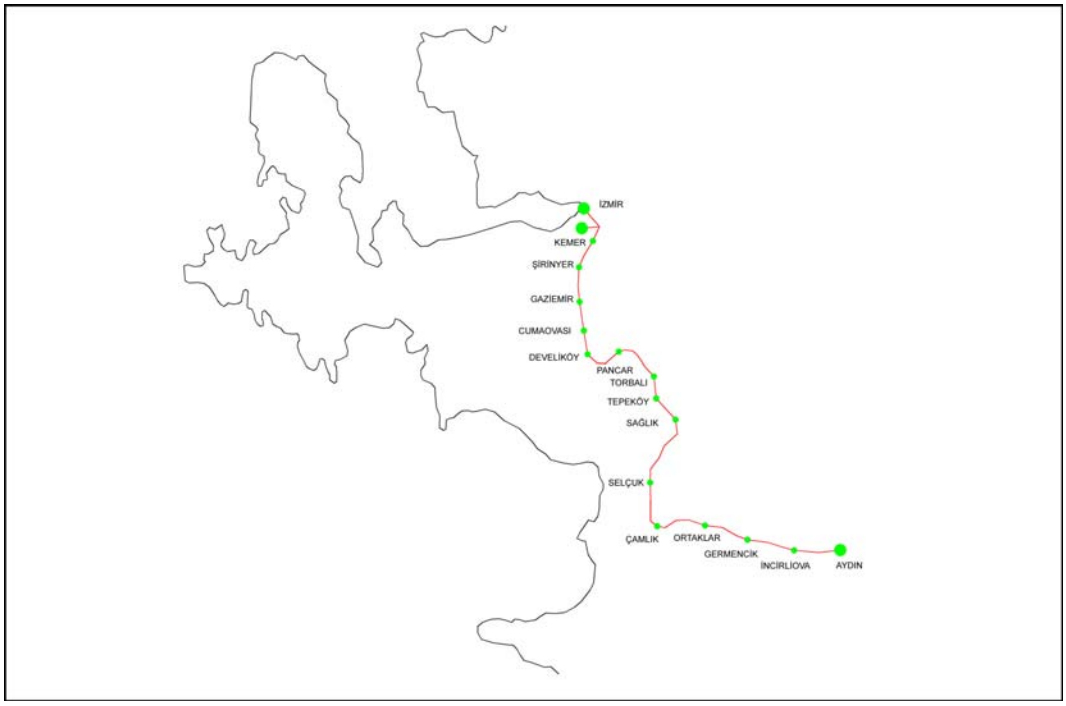


Fig.2.1: İzmir – Aydın railway line, 1856 – 1866

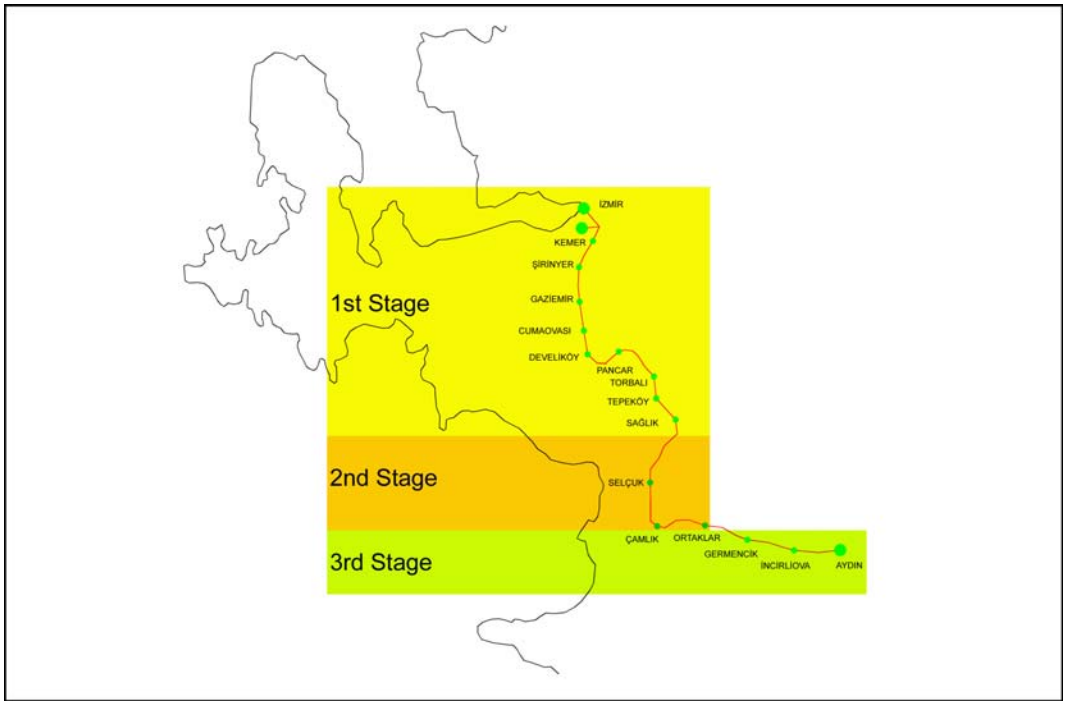


Fig.2.2: Construction Stages of İzmir – Aydın Railway Line

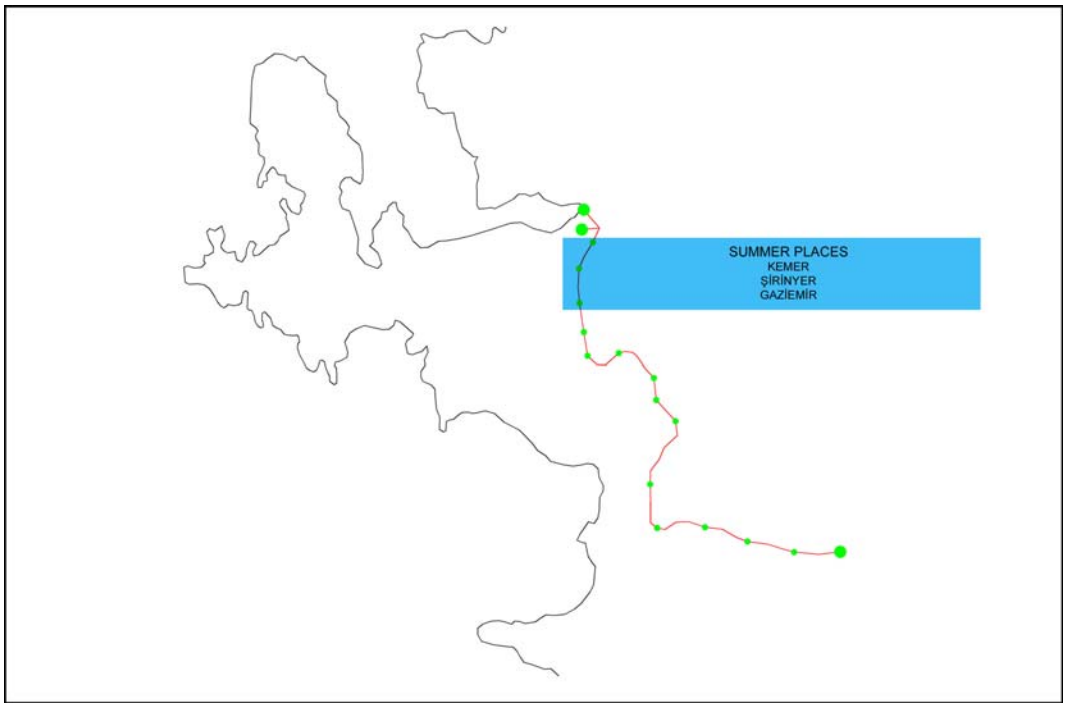


fig.2.3: Summer Places nearby İzmir after the construction of the İzmir – Aydın railway line

2.1.2. The Geography; The Physical Proporties of the Land

Three mountain ranges, three rivers between them create three fertile valleys and plains; Büyük Menderes, Küçük Menderes and Gediz rivers passes between Aydın (Selatin) Mountains, Boz Mountains, East Menteşe and West Menteşe Mountains (fig.2.4; fig.2.5).

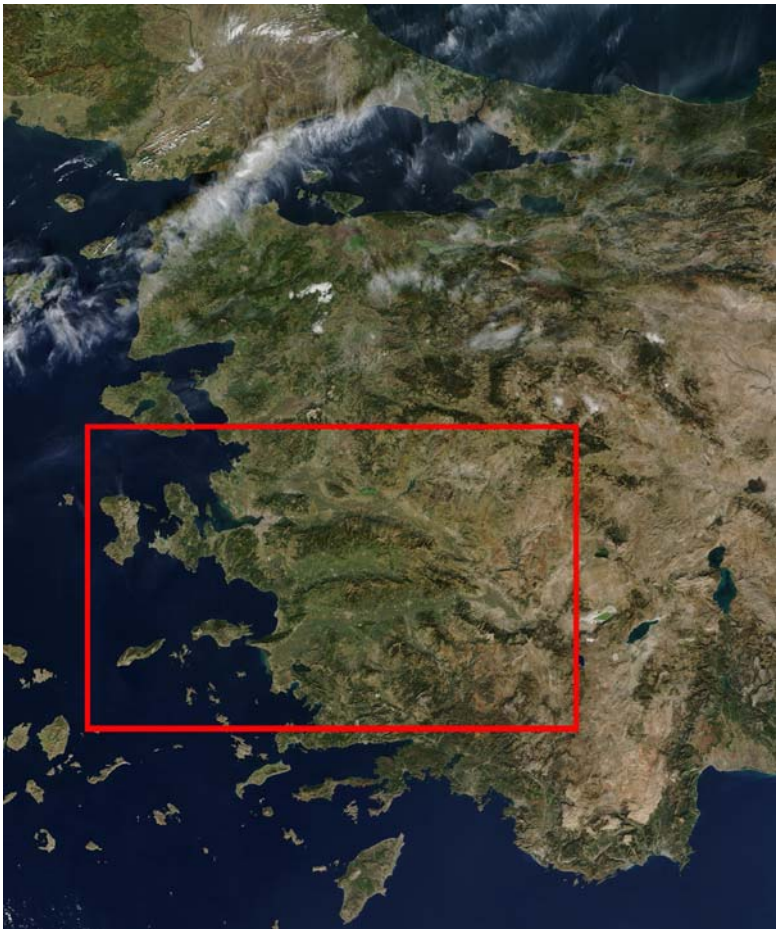


Fig.2.4: Air photo of the Aegean region at the west part of Anatolia

The Aydın and Boz Mountains extend at the east - west direction, perpendicular to the Aegean cost line, while West and East Menteşe Mountains extend at the north – south direction. The valleys between the mountains are like corridors which connect the coast line with the inner part of the region. Between the Menteşe Mountains,

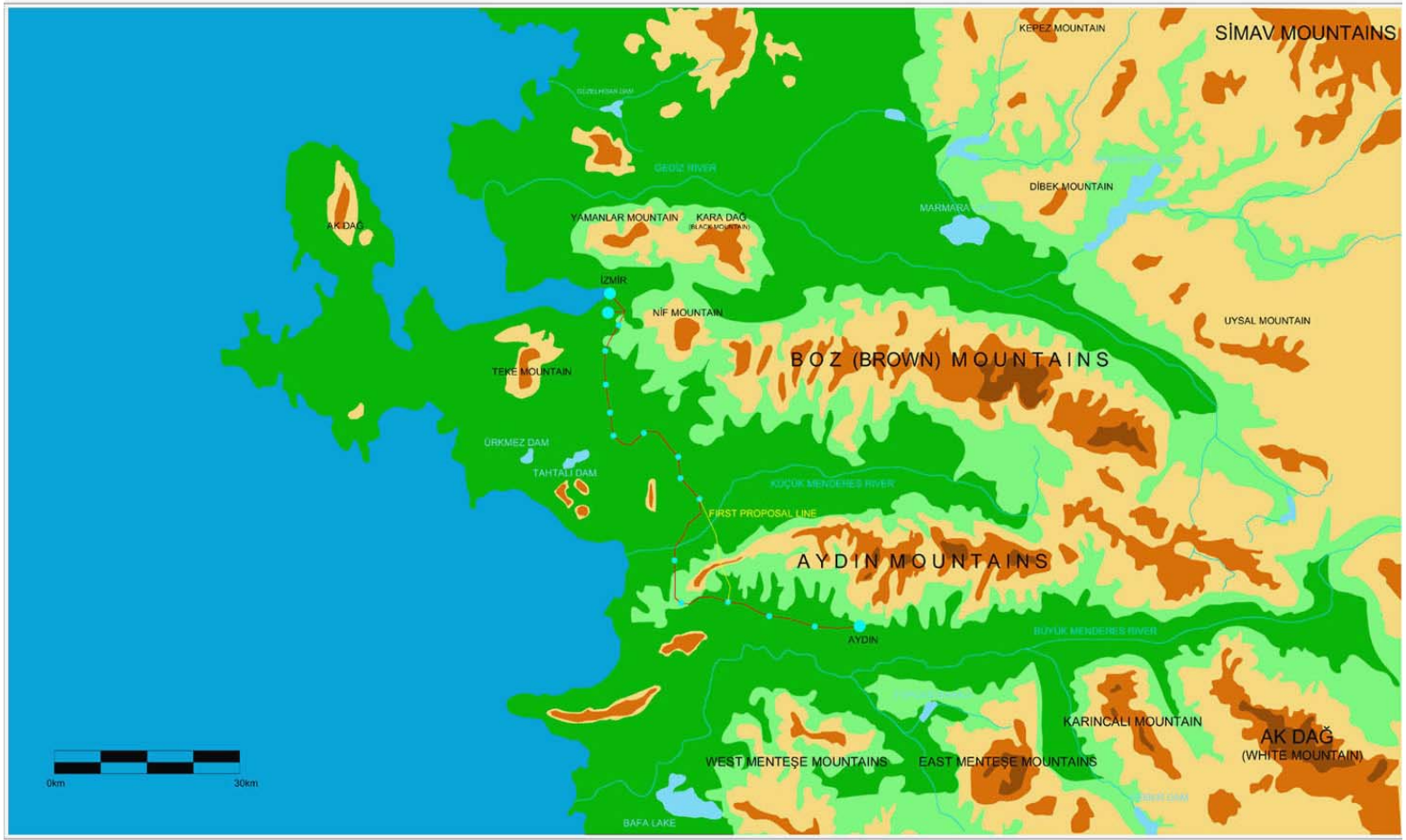


Fig.2.5: Geographical Map of Gediz, and Menderes Valleys

little valleys are formed with minor rivers at the perpendicular direction to the Büyük Menderes valley. This system of valley end up with very fertile plains filled with alluvium carried by the three main rivers. The plains have been continuously expanding and the coastline has changed extensively in time. One of the most interesting examples is Ephesus; it is now 6km far from the sea while it was the most important harbour city at the beginning of the millennium (Türkoğlu, 1999:39-40).

The plains and the valley levels start from sea level and reach up to 200m. The mountains reach up to 1500m in average. Therefore, the vegetation covers the mountains. The highest summit of the region, Karlıkdede, which is situated at the intersection of the Boz and Aydın Mountains, has 1734m height.

The climate of the region is Aegean type Mediterranean. Although summers are dry, other seasons are rainy. This climate provides good conditions for the fertile land of the region. General vegetation is scrub with pine and oak forests.

Fig.2.6: a view from Aydın Mountains to Söke plain

The İzmir – Aydın railway line connected the Büyük Menderes valley and İzmir port at the beginning. With the end of the extension constructions, railway reached into the Küçük Menderes valley.

When the path of the railway line is examined in detail, it can be observed that the line passes from the most feasible route in this geography. The necessity of the optimum slope for the locomotive and rolling stocks was provided by the use of natural landforms. The only unsolved problem, which was the digging of a tunnel passing through the Aydın Mountains, remained until the construction of the İzmir – Aydın highway. The highway line is similar with the railway line except the part in Aydın Mountains. This shows that the engineers of the İzmir – Aydın railway was aware of the potentials of the geography.

The travellers of the 19th and the 20th century mention the beauty of the landscape. Texier (1882: 148 - 149) talks about the landscape when he travelled from İzmir to Ephesus. According to him, the panorama is so beautiful that it should be seen more than once. Annie Bressey (Pınar, 2002: 261) states that although the weather is not good, the landscape is worth seeing.

2.1.3. Social Aspects

The population of the west Aegean region was very composite in the 19th century. Besides the merchants, there were different ethnic groups, which settled in the region. West Anatolia was the second cosmopolite region after İstanbul. Either İzmir city center or the inland had mainly Greek (Rum), Armenian, Jewish and Muslim populations.

In the city of İzmir, total population was around 150.000 in average in the mid of 19th century. There were 80.000 Greeks, 50.000 Turks, 6.000 Armenians, 10.000 Jews and 4.000 Levantines. The majority of the rural population was Greek; it is estimated that the total was 168.000 (Kurmuş, 1982:18; Atilla:2002, 35).

In this cosmopolite structure, the ethnic groups were competing with each other in terms of commercial activities. Especially in the city centres, the tension was higher. The Jews and Turks were not getting along with the Greeks and the Armenians. There was especially a disagreement between the Jews and to the other non – Muslim populations. Most of the time Turks the Jews. But the disagreement caused several serious diputes between the ethnic groups; one of these happened in 1872 when the Greeks and Armenians besieged the Jewish quarter for two months (Kurmuş, 1982:19).

The railway impacted these tensions in a negative way. The important positions in the railway company were occupied by the English merchants. The English managers gave the second important positions to the Greeks and the Armenians. Turks were working at the lowest levels. This situation increased the disagreement between these three groups. Moreover, due to the changing commercial structure, the Muslim merchants lost their share in commerce the Armenian and Greek merchants.

After the Independence War and the population exchanges, the variety in population changed intensely. During the Turkish Republican period the number of ethnic groups and their population numbers decreased. The exact number could not be reached; however, it is sure that the number of the Christian citizens is fewer when compared to the beginning of the century. Yet their cultural traces are still alive in the region.

The railway line had affected the settlements in West Anatolia. With the construction of the first stage, the villages where railway passed immediately began to grow. Either economic activity or population circulation transformed these little settlements into attractive centres. Kemer, Şirinyer and Gaziemir developed into summer places used by the Levantines and non - Muslim merchants. Cumaovası, Develiköy, Kuşçuburnu, Arıkbaşı and Çıplak villages, that provided the agriculture needs of İzmir, became the intersection points of the railway and camel transportation. Torbalı and Tepeköy became the regional the bazaar centres. Train timetables were arranged according to bazaar days. The extension of Ödemiş made Torbalı a junction point with which Torbalı bazaar gained much more importance. The last station was

Kozpınar (Sağlık) in the first construction stage. This village was the mine export centre of the region.

With the second and third stages, new small towns had emerged in the Büyük Menderes valley. But the important point was Ayasuluğ (Selçuk) where Ephesus is situated nearby. Before the railway, Ayasuluğ was a very small village. However, after the construction of the railway, a large number of Greeks moved to the village, to their “old” cities (Türkoğlu,1999:128). At the same time, the first archaeological and tourist activities began with the Ayasuluğ station. J.T. Woods, a railway engineer conducted the first archaeological excavation in Ephesus to find the Temple of Artemis. During the excavations, several visitors came to see the city. Moreover, J.T. Woods transferred the finds to the British Museum by railway (Atilla. 2002:69-70).

Aziziye (Çamlık) village was selected as settling place by the railway engineers. The proper climate and Ephesus affected this decision.

In the Büyük Menderes valley, three important small towns had emerged; these were Reşadiye (Ortaklar), Germencik and Karapınar (İncirliova). All of them became the production and trade centres of fig, olive and cotton. Moreover, with the railway, Ortaklar gained its characteristic food which is “çöpşiş”.

Today, most of the settlements preserve their features that came with the railway, although there are some exceptions. For example, Kozpınar (Sağlık), Develiköy stations were closed due to the lack of passengers. Gaziemir, Şirinyer and Kemer were included into the İzmir city limits and they lost their character as summer resorts. On the other hand, Selçuk became the most important touristic centre in the region. Almost all of the settlements were developed and enlarged.

Table 2.1: The population of İzmir in 2000 population census according to the districts, the yellow lines shows the population of the districts where İzmir – Aydın railway line passes (http://www.die.gov.tr, accessed in March 2005)

“	Total	Centre	Village
Total Population of İzmir	3 370 866	2 732 669	638 197
Balçova	66 877	66 877	
Bornova	396 770	391 128	5 642
Buca	315 136	308 661	6 475
Çiğli	113 543	106 740	6 803
Gaziemir	87 692	70 035	17 657
Güzelbahçe	18 190	14 924	3 266
Karşıyaka	438 764	438 430	334
Konak	782 309	781 363	946
Narlıdere	54 107	54 107	
Aliağa	57 192	37 537	19 655
Bayındır	47 214	15 870	31 344
Bergama	106 536	52 173	54 363
Beydağ	14 147	5 521	8 626
Çeşme	37 372	25 257	12 115
Dikili	30 115	12 552	17 563
Foça	36 107	14 604	21 503
Karaburun	13 446	2 932	10 514
Kemalpaşa	73 114	25 448	47 666
Kınık	32 109	13 136	18 973
Kiraz	44 910	10 001	34 909
Menderes	73 002	16 792	56 210
Menemen	114 457	46 079	68 378
Ödemiş	128 259	61 896	66 363
Seferihisar	34 761	17 526	17 235
Selçuk	33 594	25 414	8 180
Tire	78 658	42 988	35 670
Torbalı	93 216	38 099	55 117
Urla	49 269	36 579	12 690

Table 2.2: The population of Aydın in 2000 population census according to the districts, the yellow lines shows the population of the districts where İzmir – Aydın railway line passes (http://www.aydin.gov.tr, accessed in March 2005)

	Total	Centre	Village
Merkez	208341	143267	65074
Bozdoğan	35190	8300	26890
Buharkent	12984	7074	5910
Çine	53770	17867	35903
Didim	37395	25699	11696
Germencik	46821	11596	34225
İncirliova	40733	17548	23185
Karacasu	21980	5915	16065
Karpuzlu	13207	2318	10889
Koçarli	37167	8927	28240
Köşk	25321	8349	16972
Kuşadasi	65765	47661	18104
Kuyucak	31094	7282	23812
Nazilli	145963	105665	40298
Söke	137739	62384	75355
Sultanhisar	22795	6256	16539
Yenipazar	15492	7006	8486
Total Population of Aydın	950757	493114	457643

2.1.4. Economy

Agriculture is the main economic resource since 1000 BC. In Ionia and Aiolia regions that are the western part of Anatolia. Especially during the Hellenistic period, the Menderes valleys became the economy centre of its time due to the geographical properties. (Yavi, 1998:52)

Antique trade roads were passing through the Büyük Menderes valley. In addition to the Royal Road, alternative roads connecting the Aegean Sea and Aegean region to the Central Anatolia and the Black Sea made the valley main axis of the trade world. The commercial activity affected the agriculture in positive way.

During Roman era, in parallel with Ephesus and Miletus, the region gained more importance. In addition to agriculture, textile industry was developed in this period. At the same time, this region's wines became famous. All goods produced in the region were being transported to the harbour cities and exported through the Aegean and the Mediterranean Seas.

However, after the 5th century. an economical regression occurred in the region. The roman cities, especially Ephesus, lost its magnificence and attraction after this date. As a result, the best period of region's history has ended until the 19th century.

Between 5th and 19th century, a minor closed economy developed in the region. Yet, it had enough activity for the inner market during the Ottoman Empire period. The agricultural products, wine, olives and fig of these valleys were very famous.

This introverted economy provided the minimum relationship with the world economy. Limited and unsystematic import and export of goods strengthened this closed structure during the years (Yavi, 1998:58).

But the railway had an impact on the regional economy in the 19th century as explained above. The railway connected the valley and the west Aegean region to the world economy.

Before the railway, the region's economic potential had been known but to use this potential a new commercial organization was needed. When compared with the other regions, Western Anatolia was the most intense region in terms of commercial activity in the Ottoman Empire. Not only the fertile land had importance but also the protected port of İzmir and the underground mine sources had important economical potentials (Kurmuş, 1982:17).

The line was drawn mainly depending on economical factors. Almost all of the station points were positioned due to the economic properties of the lands.

When the İzmir - Aydın line is examined, important details relating to this can be observed. The first economic property is the sown lands and the

existence of transportation potential of the products. Moreover, the natural springs also had a role in the selection of the station point.

As mentioned before, Cumaovası, Develiköy, Pancar stations were the collection points of the agricultural products. The vegetables and the fruits were the major products. Moreover, Cumaovası had one of the major water springs and the water would have been bottled and transported to İzmir. Gaziemir and Seydişehir also were villages where viniculture and gardens had been developed. (Atay, 1978:53).

But the five stations collected all of the products of the Büyük Menderes valley; these are Torbalı, Ortaklar, İncirliova, Germencik and Aydın where fig, cotton, olive, tobacco and cereals were collected. At the same time, textile and olive products, natural dye, dry fruits and meat also were transported to the İzmir port (Yavi, 1998:64; Atilla, 2002:65).

The other important point was the mines. There was lead in Gaziemir, iron, mercury and marble in Torbalı, mercury and emery in Sağlık (Kozpınar), copper, lead and coal in Cumaovası. Although these mines were known, it could not be mined all of this beds due to poor technology (Yavi, 1998: 66; Atilla, 2002, 66; Rıfat, 1997: 147 – 149). Moreover, Söke and Nazilli regions were very rich in emery stone and coal which had great importance. With the extensions, these mine beds became available for the English industry.

This activity started the Industrialization Movement in the region. Most of the atelier and factories were related with agricultural activities. Besides the textile industry and olive rendering plants, soap factories, mills and flour factories were opened after the construction of the railway.

The other important activity was mining; between 1870 and 1901, 146 mine concessions were given to the mine investors. Ottoman citizens could gain 69 of them. With these concessions, several mining firms were founded and began to work (Kurmuş, 1982:128).

The basis of the contemporary Western Anatolian economy was formed by the construction of the railway. The basic industrial fields are the agriculture and textile industry. The region has the second rank after

Çukurova in the production of cotton. Moreover, food industry also has an important place in the economy of the region.

The machinery production developed in the region. Especially, agricultural machinery and ice-cream machinery became the major fields in the region (Yavi, 1998; 80-83; *İzmir İl Yıllığı*, 1994; 22-23).

The station points of the İzmir – Aydın railway line are the district of these two cities. Kemer, Şirinyer, Gaziemir are included in the city limits of İzmir. But Gaziemir is still important for military transportation. Cumaovası is still important for the water spring, Şaşal Spring Water Co. establishments is in the district. Besides, antimony, copper, lead, zinc and coal mines are still functioning (*İzmir İl Yıllığı*, 1994;33-34).

Torbalı, Germencik, İncirliova are the major districts in terms of agriculture. %80 of the Torbalı population is dealing with agriculture. All of these districts are known for their figs. In addition to that, cotton, corn and olive are among regional products.

Also, Ortaklar became an important district due to development of industry. It has one of the largest industrial estates in the region. In this estate, agricultural mechanical equipment production is the forerunner in the field.

2.1.5. Archeology

It is most likely that the greatest impact of the railway had been on Turkey's archaeology. One of the Seven Wonders of the Ancient World was discovered as a result of the İzmir – Aydın railway construction; the Temple of Artemis in Ephesus. In addition, the first archaeological excavation in Ephesus was started by the English railway engineer J.T. Woods.

The İzmir – Aydın line passes near four important ancient cities. These are Metropolis in Torbalı, Magnesia of Meander in Ortaklar, Tralleis in Aydın and Ephesus in Selçuk (fig.2.7).

Fig.2.7: The Ancient Sites where İzmir – Aydın line passes

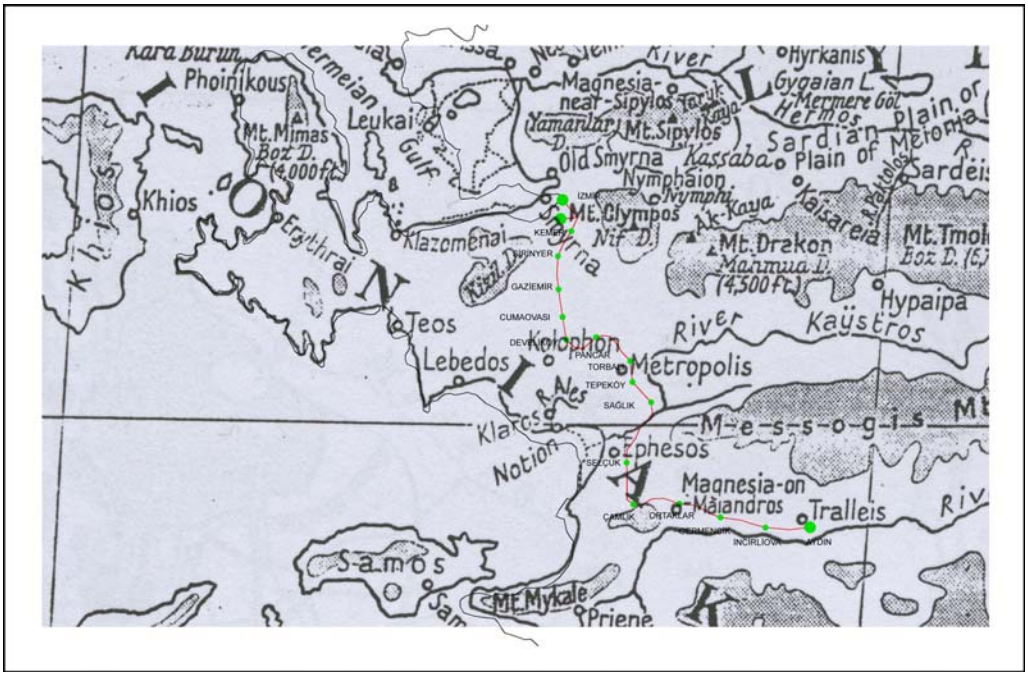


Fig. 2.8. The juxtaposition of the map showing the Ancient cities and the İzmir – Aydın railway line

After the failure in opening the tunnel, the direction of the line way was changed. When forming the new way, Ayasuluğ (Selçuk) has been considered seriously for three reasons; first of all the engineers, including J.T. Woods was putting pressure on the railway company administration to pass the railway line near Ephesus. Secondly, Saint Jean Church and Magdelena House which were important for Christians were in Ayasuluğ (Selçuk). And the lastly, the topography of the Ayasuluğ was suitable for the construction of the railway (Atilla, 2002: 68). At the end the line way had its final position.

One important thing can be seen when the line way is considered as total; as a matter of fact, the line and the antique trade roads have similarities. While antique trade ways were connecting the cities to the ports, the İzmir – Aydın railway which has been constructed for the same purpose, followed these trade ways. In this way, it could be possible to reach all the potentials of İzmir hinterland.

The railway had important effect in terms archaeology; J.T. Woods began to the excavations in Ephesus in 1863. His main aim was to find the Temple of Artemis. Yet he would wait 6 years to reach his goal. During this time, Ephesus was excavated unsystematically and in inappropriate ways. But, the finds were brilliant including the several statues and inscription panels. Almost all of the finds were transported to the İzmir port by railway. J.T. Woods had found the excavation funding from the British Museum and the finds were sent to England to pay the debt (Türkoğlu, 1999:128 – 129).

2.1.6. Tourism

The railway began the first touristic trips to the region. The Ephesus excavations were attracting attention and visitors, both from the region and from Europe, including the Prince of England, came to see Ephesus using the İzmir – Aydın railway (Türkoğlu, 1999:130). In the memories of the travellers of the late 19th century and the 20th century, the trips by railway to

ancient cities and interesting places of the Western Anatolia are frequently mentioned.[11]

Another touristic activity was the trips to Germencik. Germencik was known with its geo – thermal water sources. The baths became very famous with the railway. Even the railway company started special train trips to the Germencik baths (Atilla, 2002:80).

Today, Western Anatolia is an important place in terms of archaeology and tourism. During the 20th century, in almost all the Ionian cities in the region excavations were initiated. At the same time, the archaeology oriented tourism was developed during this time. The tourism agencies' tours are mostly archaeological. The cultural tourism has an important place in the national tourism potential (Bezmen, 2001: 108 – 109).

As already mentioned, the most important city is Ephesus which is also the most visited ancient city in Turkey, among the four ancient cities nearby the İzmir – Aydın railway line. Approximately 1.500.000 people visit the city every year while the whole ancient sites of Aydın including Magnesia of Meander, were visited by 285.000 people in 2004.[12] Moreover, Ephesus Museum in Selçuk was visited by 143650 people in 2004.[13] These numbers indicate the popularity of Ephesus and Selçuk both for foreigner and local tourists.

There are also several events and festivals in the region. The most popular one is the International Ephesus Culture and Art Festival which is held in January. Between June and October, Ephesus Art Days is organized in Selçuk. During this organization, several art events take place including

11 For detailed information Pınar, İlhan (Ed.). (2002). Hacılar, Misyonerler ve İzmir; Yabancıların Gözüyle Osmanlı Döneminde İzmir: 1608 – 1918. İzmir: İzmir Büyükşehir Belediyesi Kültür Yayınları

12 According to the declaration of Cultural and Tourism Ministry the visitor numbers of Ephesus ancient city are 1108000 person in 1999, 1263000 person in 2000, 1563000 person in 2001 (http://www.hurriyetim.com.tr/haber/0,,sid~227@tarih~2002-06-07-m@nvid~134011,00.asp, accessed in April 2005). For the numbers related to Aydın tourism please look at the official site of Aydın Governorship; http://www.aydin.gov.tr (accessed in April 2005).

13 The declaration of General Directory of Museums in 15 December 2004 (http://www.hurriyetim.com.tr/haber/0,,sid~227@tarih~2004-12-16-t@nvid~509103,00.asp, accessed in April 2005)

concerts, theatres, exhibitions and folk dancing shows (*İzmir İl Yıllığı*, 1994:402 – 403).

There are fig festivals and camel wrestling festivals in the region. In Germencik and İncirliova, in the first week of September, Fig Festivals are organized to celebrate the reaping of fig. In January and February, in Selçuk, İncirliova and Germencik traditional camel wrestling competitions are held. Especially the Germencik Camel Wrestling festival is the most famous organization in the Western Anatolia (Kısa, 1960: 49).

Another interesting place in the region, is Çamlık. Open locomotive museum, which is one of the biggest in the world, is placed at the old maintenance and repairs ateliers of the İzmir – Aydın railway. The old steam locomotives which were used in the region are in the museum and open to the visitors. According to the TCDD 3rd Region General Directorates, there is a great interest in the museum by the citizens of İzmir and foreign tourists all through the year, the museum stays open. Especially, in the week – ends the density of the visitors get higher.

2.2. Architectural Features of İzmir – Aydin Railway Line

This chapter presents the general architectural characteristic of the stations based on the site survey and given as appendices. The analysis are given in an order starting from the general layout then continuing with definition of buildings, spaces and structural features.

2.2.1. The Stations

2.2.1.1. Location with in the city

Actually there are 17 stations in the İzmir – Aydın railway line. However in 1988 a new station was added after the construction of Adnan Menderes International Airport.

Alsancak and Basmane Stations which are placed in the centre of İzmir are not included within the survey as they were beyond the scope of the thesis. Similarly, since Hilal station was demolished during the metro construction and new station was built as the Hilal metro station, it is also excluded from this study. Besides, four of the stations, that are Hilal, Develiköy, Sağlık and Çamlık, are out of use. Although the Develiköy station is still standing, in the last decade of the 20th century, the station was closed due to the lack of passengers. Sağlık (Kozpınar) station was closed because of the İzmir – Aydın highway construction. The place of Çamlık station was changed during the renewal of the railway line between Selçuk and Çamlık. The old station was closed and a new station was built 500 m far from the old station.

Among the used ones, there are stations which were either demolished or rebuilt. These are Cumalıkızık, Tepeköy, Germencik and Aydın which were built by the British company between 1856 and 1866. Between 1950 and 1960 new stations were built at these four towns. Especially, Aydın Station was rebuilt with the order of Adnan Menderes in 1955.

2.2.1.2. The Plan Arrangements and Functions

Most of these seventeen stations are placed in the commercial centre of the towns. After the beginning of the 19th century, the changes in the relationship between the cities and environs and the new communication methods affected the traditional Ottoman cities and towns. The main reason behind these changes was the railway. The new spatial relations required new spatial arrangements; in other words, the idea of kervansaray and the hans of the 16th century had to be changed into stations, antrepots and hotels in the 19th century. The new town centres were restructured around stations, post offices, hotels which were new functions (Tekeli, 1985: 881). This is best observed in the İzmir –Aydın railway line towns. In, Gaziemir,

Cumaovası, Torbalı, Selçuk, Ortaklar, Germencik, İncirliova and Aydın, the commercial centre were situated near the stations.

Stations are mainly a group of buildings which has different functions. These are:

1. The Station Offices
2. The Depot
3. The Residence
4. The Water Depots.
5. The Maintenance and Repair Area
6. Train Sheds – Platform Sheds

When these complexes are studied according to railway arrangement, two types of stations can be defined: one – sided stations and two – sided stations (fig.2.9, fig.2.10, table 2.3, table 2.4).

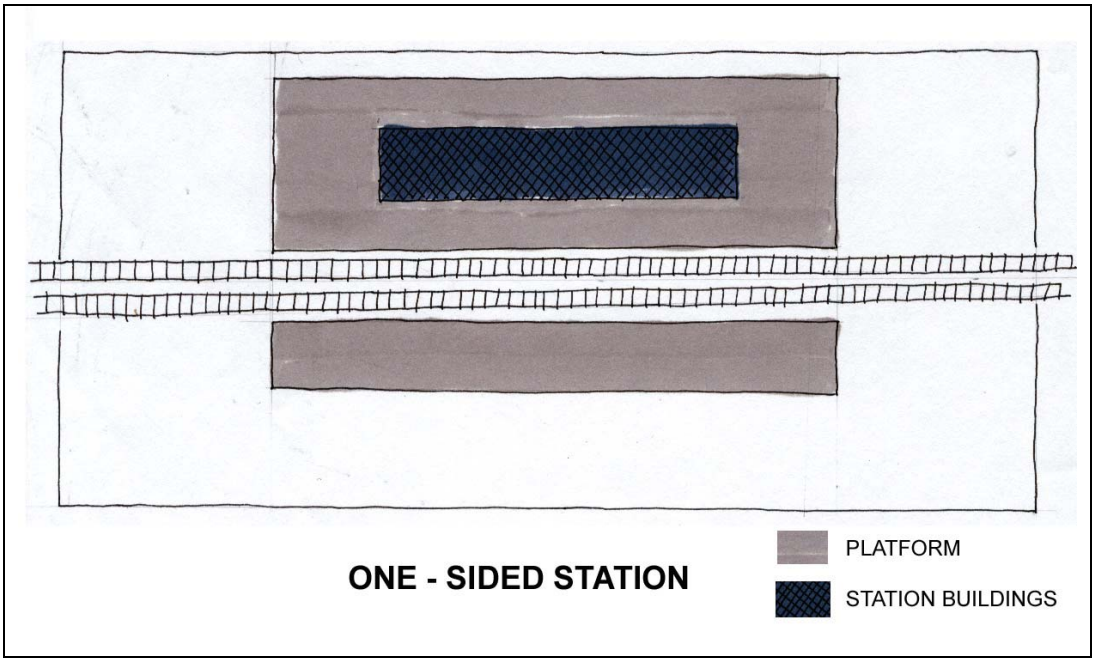


Fig. 2.9: Diagram of one – sided station

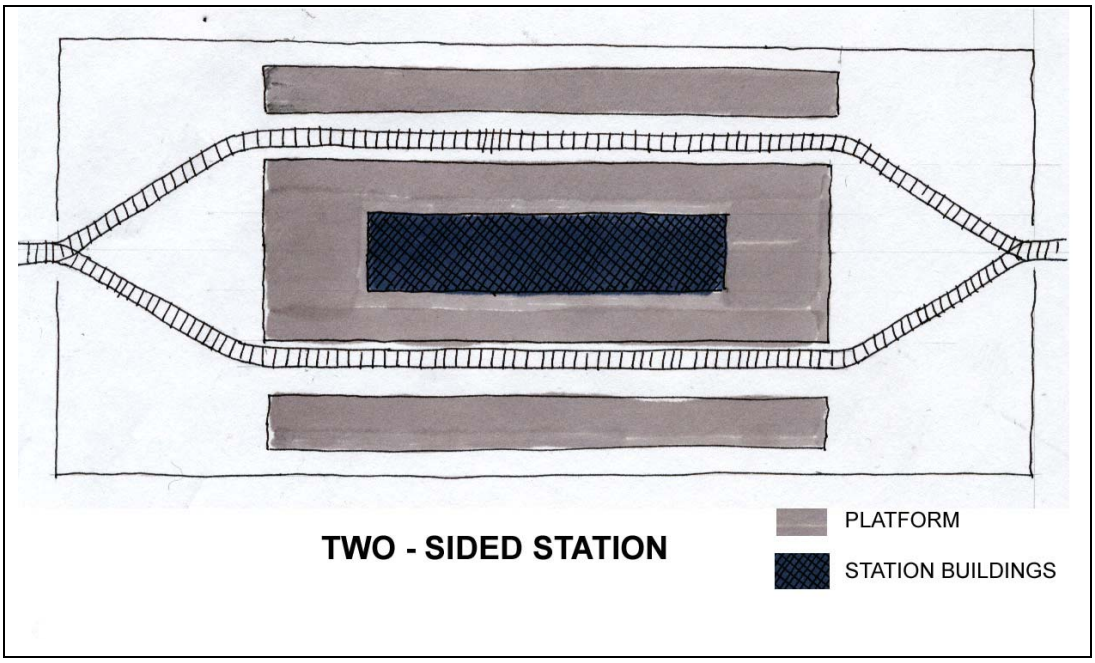


Fig.2.10: Diagram of two sided station

Table 2.3: The one – sided and two – sided stations

One – sided stations	Şirinyer, Gaziemir, Develiköy, Pancar, Tepeköy, Sağlık, Selçuk, Çamlık, Aydın
Two – sided stations	Kemer, Torbalı, Cumaovası, Ortaklar, İncirliova, Germencik

These functions do not need to be in separate buildings; In fact, all the stations have different combinations of the functions. The water depot is always separated building.

These functions do not exist in the all of the stations. The minimum functions in the stations are the main station and the depot. The others are placed in the stations if necessary. The buildings are surrounded by the platforms which are the dominant and necessary element for the station areas.

There are minimum 2, maximum 5 buildings in the stations. The function distribution is not directly related with the number of buildings (fig.2.11, fig.2.12, fig.2.13, fig.2.14, fig.2.15, fig.2.16). There is always one main building which has minimum two functions, station offices and depot or residence. Station offices, residences and depot form the most common functional combination in the main building. The other buildings usually have single functions. The water depot, if the main building does not posses, the depot constitutes the auxiliary buildings. In two examples, Tepeköy and Cumaovası, residences are separated from the major station building (fig.2.18). The maintenance buildings are in single station; Çamlık (fig.2.17).

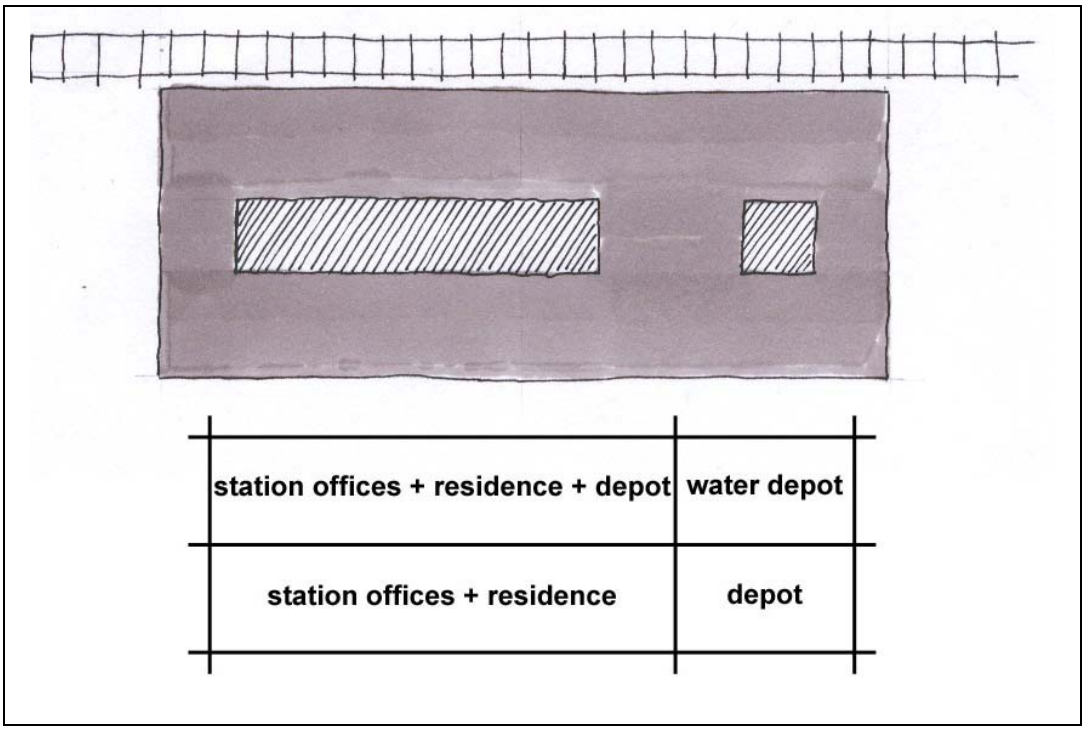


Fig.2.11: Station with two buildings and function combinations

Table 2.4: The stations and number of buildings

Stations with 2 buildings	Gaziemir, Şirinyer, Develiköy, Sağlık
Stations with 3 buildings	Kemer, Torbalı, Selçuk, Tepeköy, Aydın
Stations with 4 buildings	Çamlık, İncirliova, Ortaklar
Stations with 5 buildings	Cumaovası

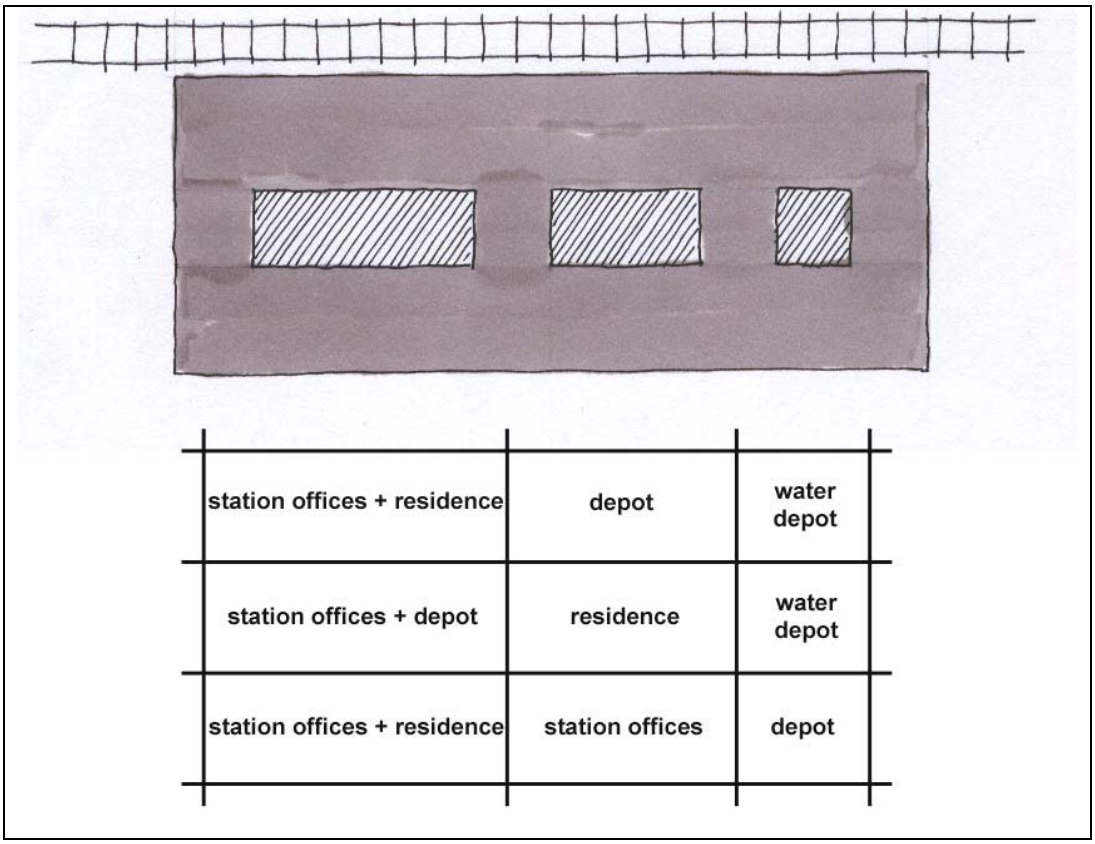


Fig.2.12: Station with three buildings and function combinations

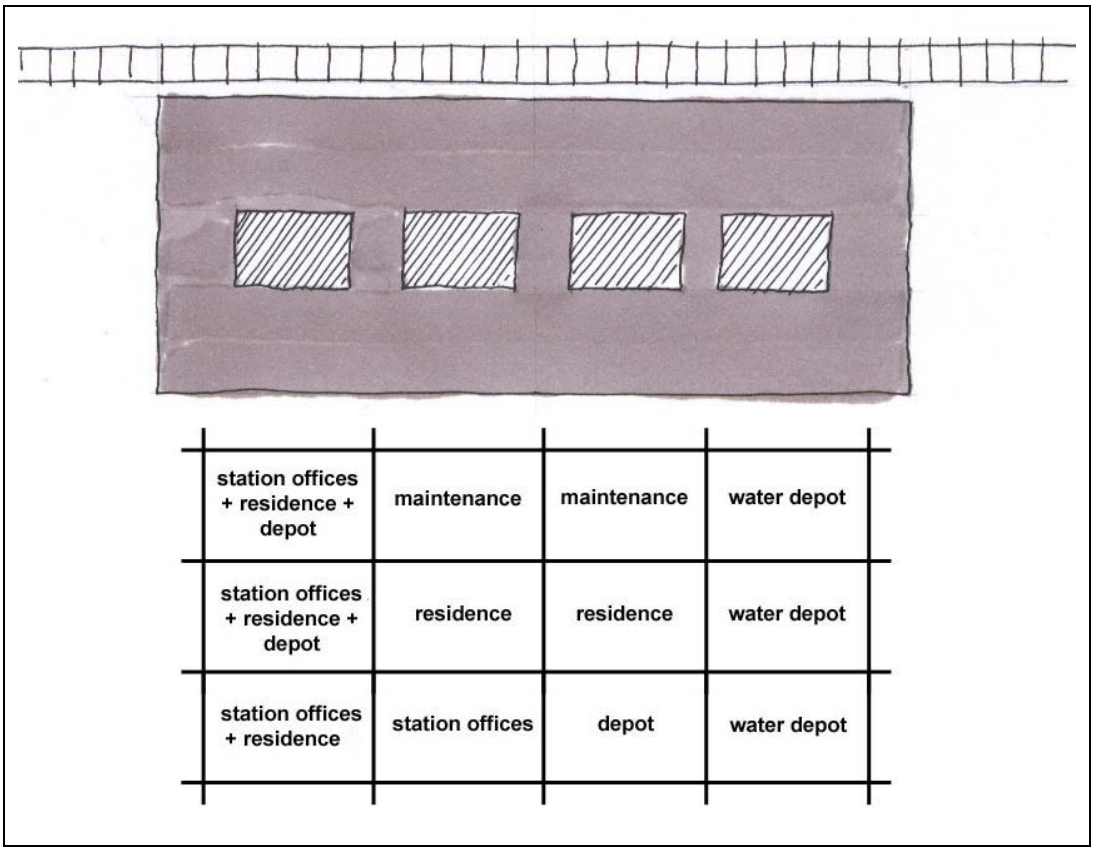


Fig.2.13: Station with four buildings and function combination

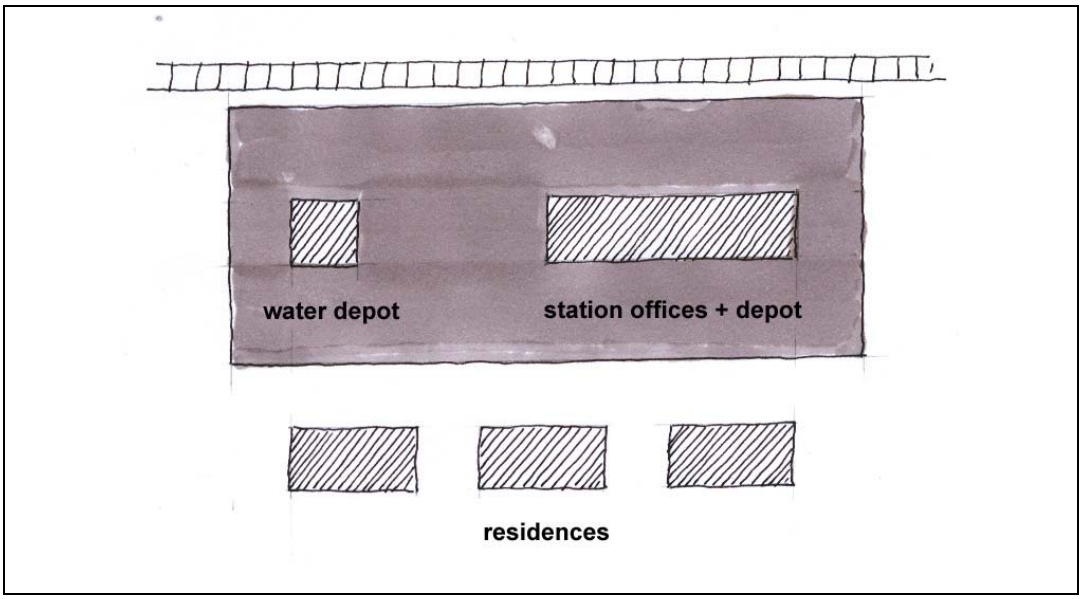


Fig.2.14: Station with five buildings and functions

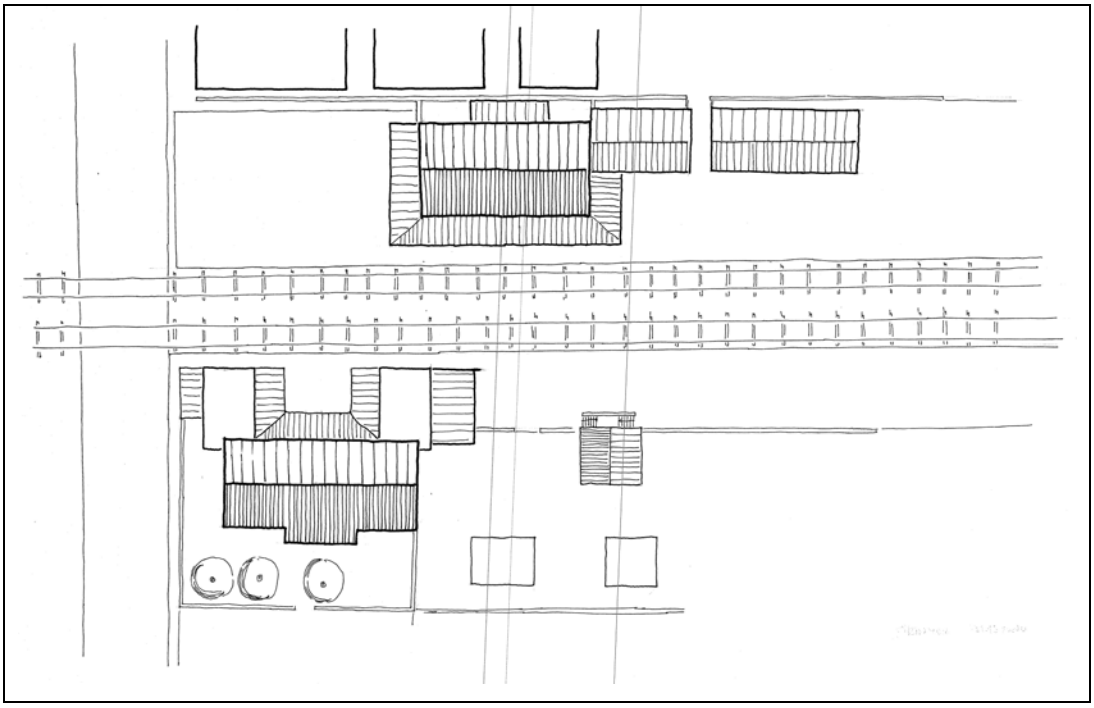


Fig.2.15: Şirinyer Station site plan

While Alsancak and Basmane *terminies* have train sheds, the other stations do not have; instead, the main station buildings have sheds to cover the platforms. There are three types of platform sheds; first one is the long eaves. The second one has the cantilever pent roofs. The last one has the toothed roof between the two station buildings (fig.2.19).

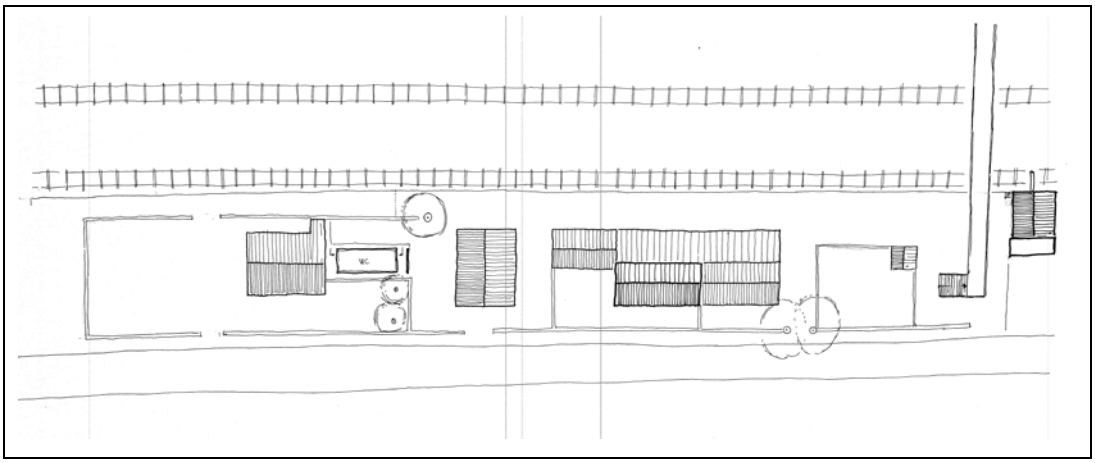


Fig.2.16: Selçuk Station site plan

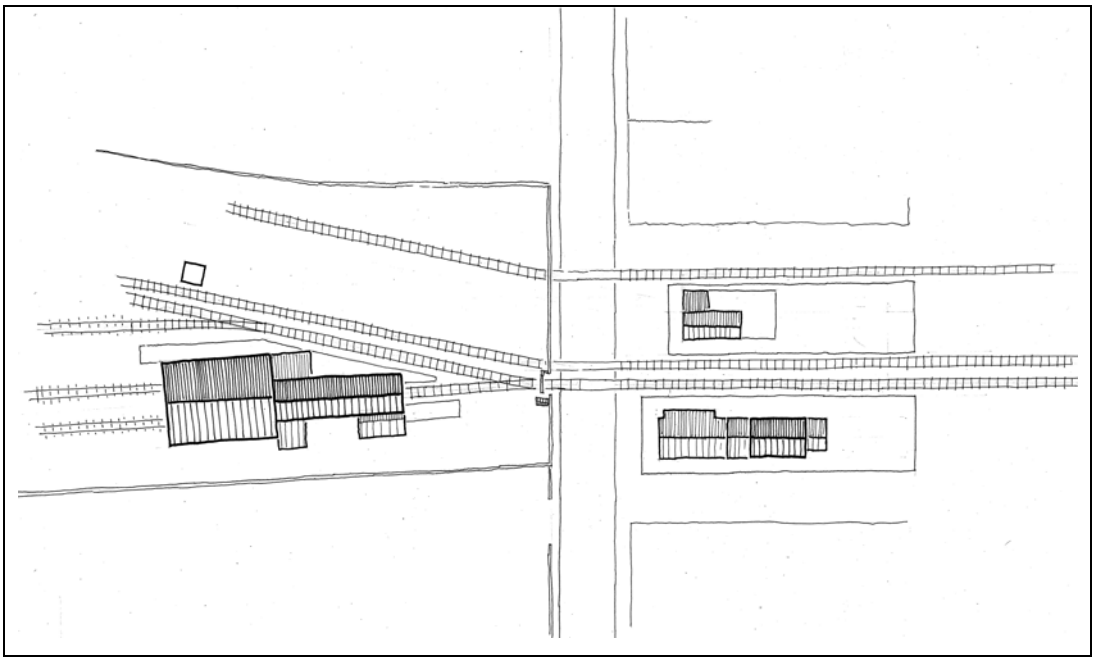


Fig.2.17: Çamlık Station site plan

2.2.1.3. The Building Heights

The heights of the buildings differ according to their functions. The main station buildings are one or two storey high. The residence is always at the

upper floor if the main station building has a second storey. No other function is situated in the upper floors. The functional combination and the number of buildings are not directly related with the number of the storeys.

The depot, water depots and the maintenance buildings have the same heights with the two-storey station buildings. The heights of water depots and the maintenance buildings are related with the steam power locomotives height (fig.2.20).

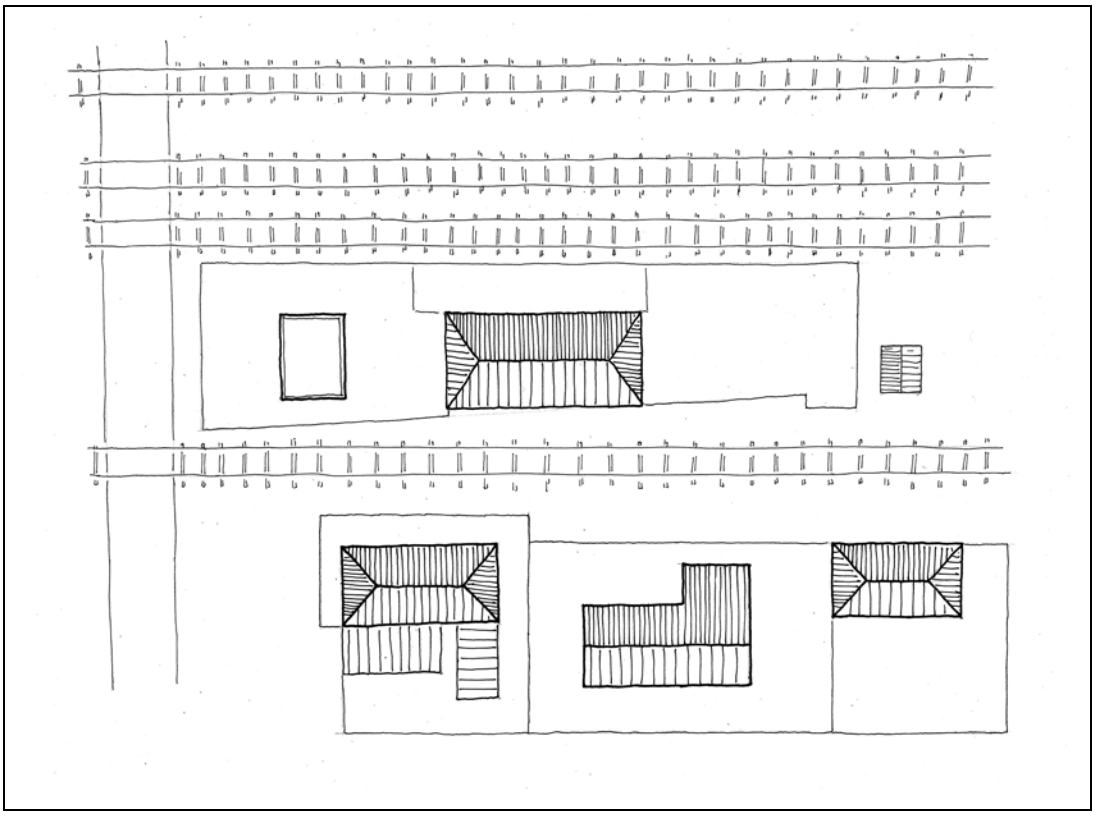


Fig.2.18: Cumaovası Station site plan

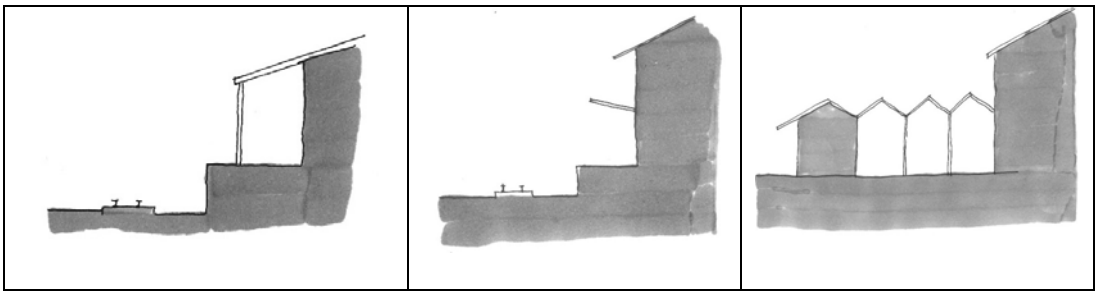


Fig. 2.19: The platform sheds

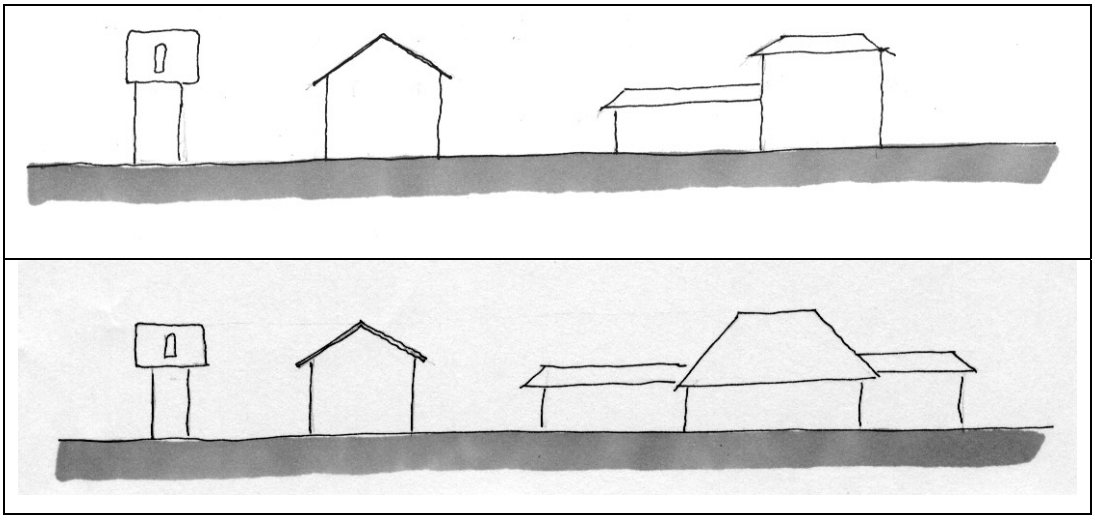


Fig.2.20: Buildings height relation

2.2.2. Building Types

2.2.2.1. The Main Station Building

Actually, the main station building is the major element in stations and it is the most dominant one.

In one-sided stations the main station buildings mainly including offices, are located in the centre of the stations. It works as the bridge between the city and the railway, the train. The stations lie in parallel to the railway line.

So they have two major façades; one for the newcomers to the city and the other for the citizens. They are not identical (fig.2.21, fig.2.22).

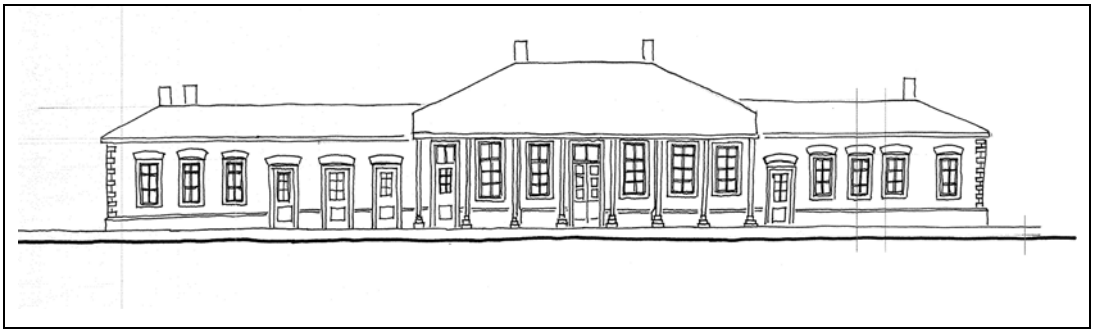


Fig. 2.21: Railway façade of the Gaziemir Station

Fig.2.22: City façade of the Gaziemir Station

In two – sided stations the the two main façades are identical. The buildings are located in longitudinal way in the platform. Since there are two façades facing the lines, there is little difference between them (fig.2.24, fig.2.25).

Fig.2.23: İncirliova Station main railway façade

Fig.2.24. İncirliova Station façade

The station buildings are mainly composed of a Waiting Room, Chief's Office, Ticket Office, Departure Office and Facilities Supervisor Office.

The residences are the houses used by the railway officers working in the station. In every station there are at least two dwellings built for the officers. The residences are mostly the part of the main station building. However in two examples, Cumaovası and Tepeköy, the residences are separated buildings near the railway line and station. In Incirliova Station, in addition to the residences at the main station building, two other residences were constructed.

The main station buildings are either single storey or two storeys. The dwellings are located at the upper floor. In addition to the station offices, the residences and depot are placed in the main station building.

In single storey buildings, the station offices are in the centre. Other functions, the residences and depot are placed at two sides of the station offices (fig.2.25).

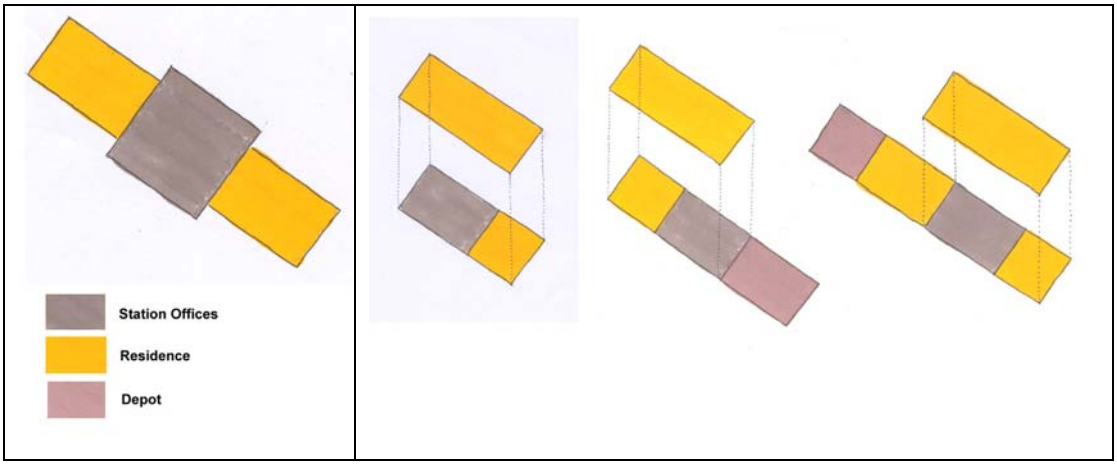


Fig.2.25: Plan diagrams of the main station buildings. Left one shows the single storey building, right ones shows the two storey buildings.

The Torbalı and Gaziemir have single storey main station buildings (fig.2.28, fig.2.29). The plan schemes have similarities; the station offices are the chief's office, departure office, ticket office and waiting room. In Gaziemir Station a security office was added to these spaces (fig.2.26). In İncirliova, the office of the Station Facilities Supervisor is situated at the residence part. The waiting room is placed at the centre and it has two storey heights. The ticket office has opening to the waiting room. The offices are the adjacent spaces to the waiting room. All spaces are designed for minimum need. There are no in – built-in furniture. And, the original furniture is not anymore present in these spaces. On the other hand, in all spaces there are fire

places for heating. But they are out of use since the 1950's due to lack of maintenance (fig.2.27).

Fig.2.26: The chief's office of Gaziemir Station

There are minimum 3 officers in the stations; one is for the chief and the other is for the officer who is responsible to control the train departure and arrivals. The third officer is responsible for the switches. If necessary, a security guard is assigned in the station. In addition to these personnel, there are ticket officers in some stations.

Fig.2.27: Closed fire place in the departure office in Gaziemir Station.

The office spaces and waiting rooms, together with the platforms, are the public spaces of the stations while the residences, which are private spaces, were built for the accommodation of the officers. In Torbalı and Gaziemir stations, the residences are placed at to wings of the main station buildings. There are two in Gaziemir and three in Torbalı station. It was not possible to survey the residence in Gaziemir station. In Torbalı station, two residences could be surveyed. In one of them the original plan scheme can be read. It is composed of three rooms and a kitchen. One of the rooms is bigger than the other. It is possible that the living place is that big room which is placed to nearer to the main platform. There are simple places as in the offices. In none of the spaces, no ornamentation was observed.

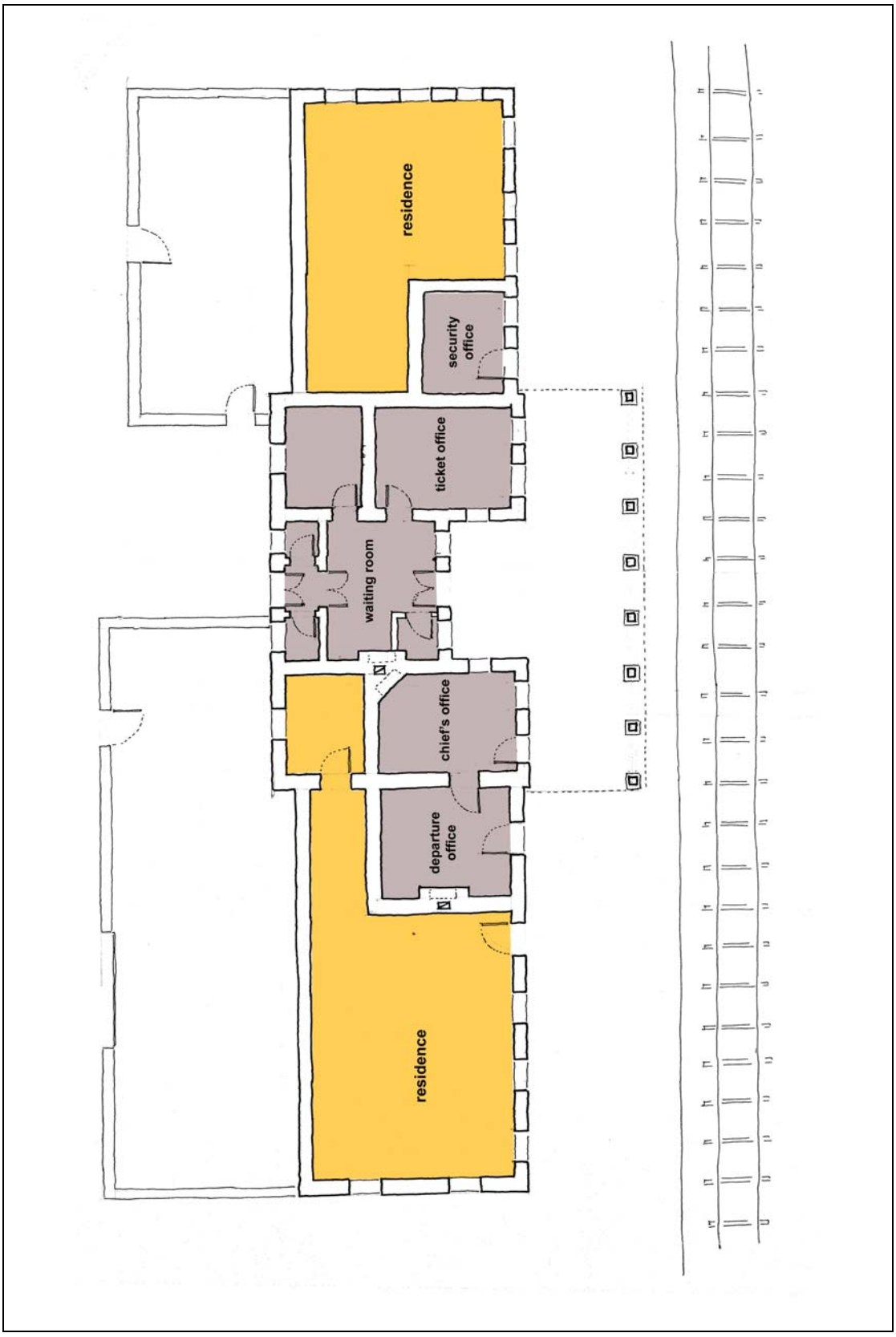


Fig.2.28: The Plan of Gaziemir Main Station Building

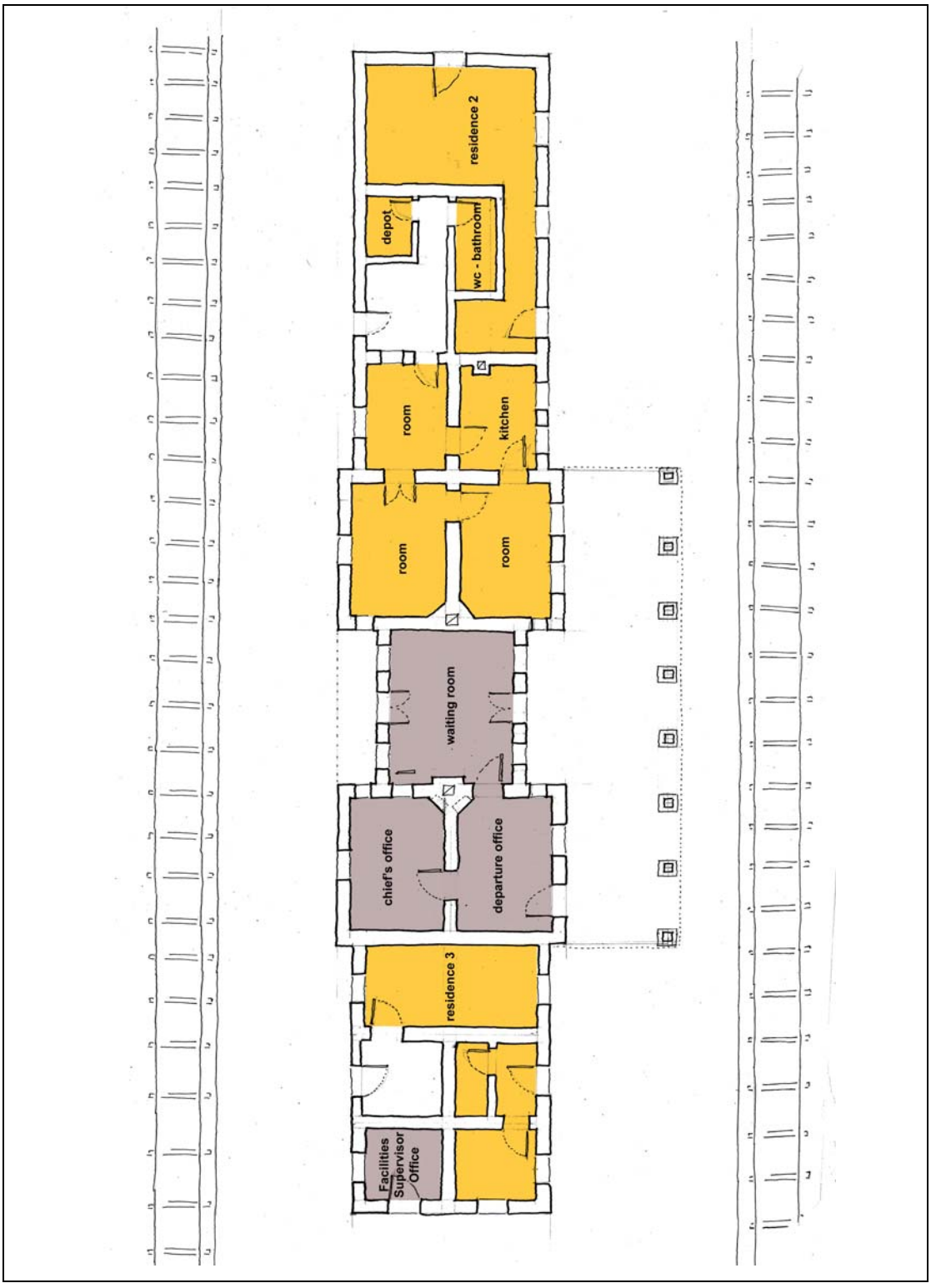


Fig.2.29: The Plan of Torbali Main Station Building

The two – storey main station buildings basically have similar plan schemes. The ground floor is composed of station office and residence. It is possible to find the depot of the station in these buildings at the ground floor. The residences are situated either ground or first floor (fig.2.31, fig.2.32, fig.2.33, fig.2.34, fig.2.35, fig.2.36).

The offices are at the centre of the ground floor. In these buildings the offices are arrayed in line. Different than the single-storey main station buildings, the waiting room are not differentiated from the other offices. The entrance to the residence and the service spaces are at the ground floor next to the offices. The depots are situated at the end of the station building.

There are two types of residences in these buildings: the small one is composed of four spaces; two rooms, a wc and a bathroom. The other residence is bigger than the other. The entrance and wet spaces are placed with one or two rooms at the basement. At upper floors two or three rooms are situated (fig.2.30).

Fig.2.30: Kitchen of Selçuk station residence

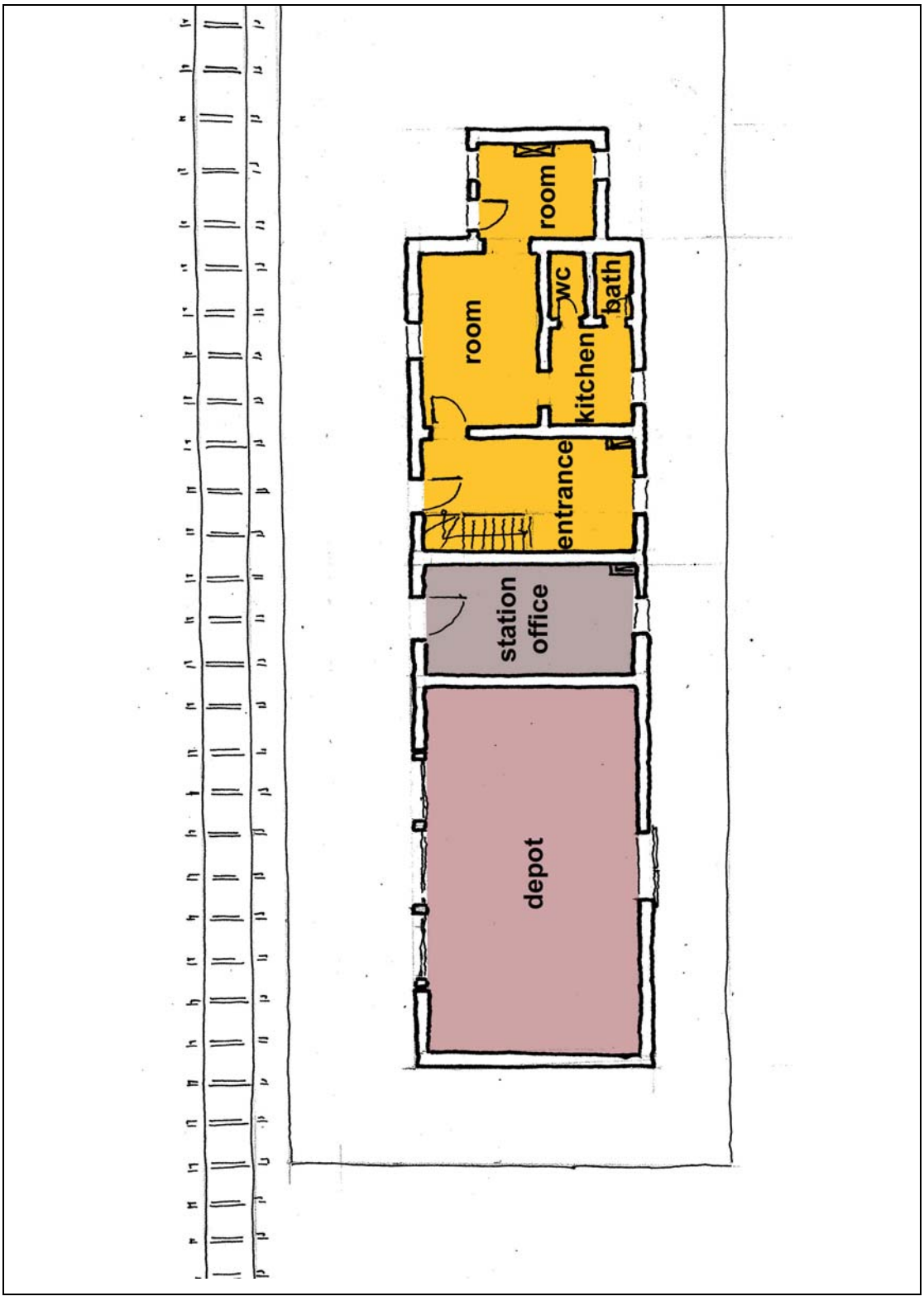


Fig.2.31: Ground floor plan of Çamlık main station building

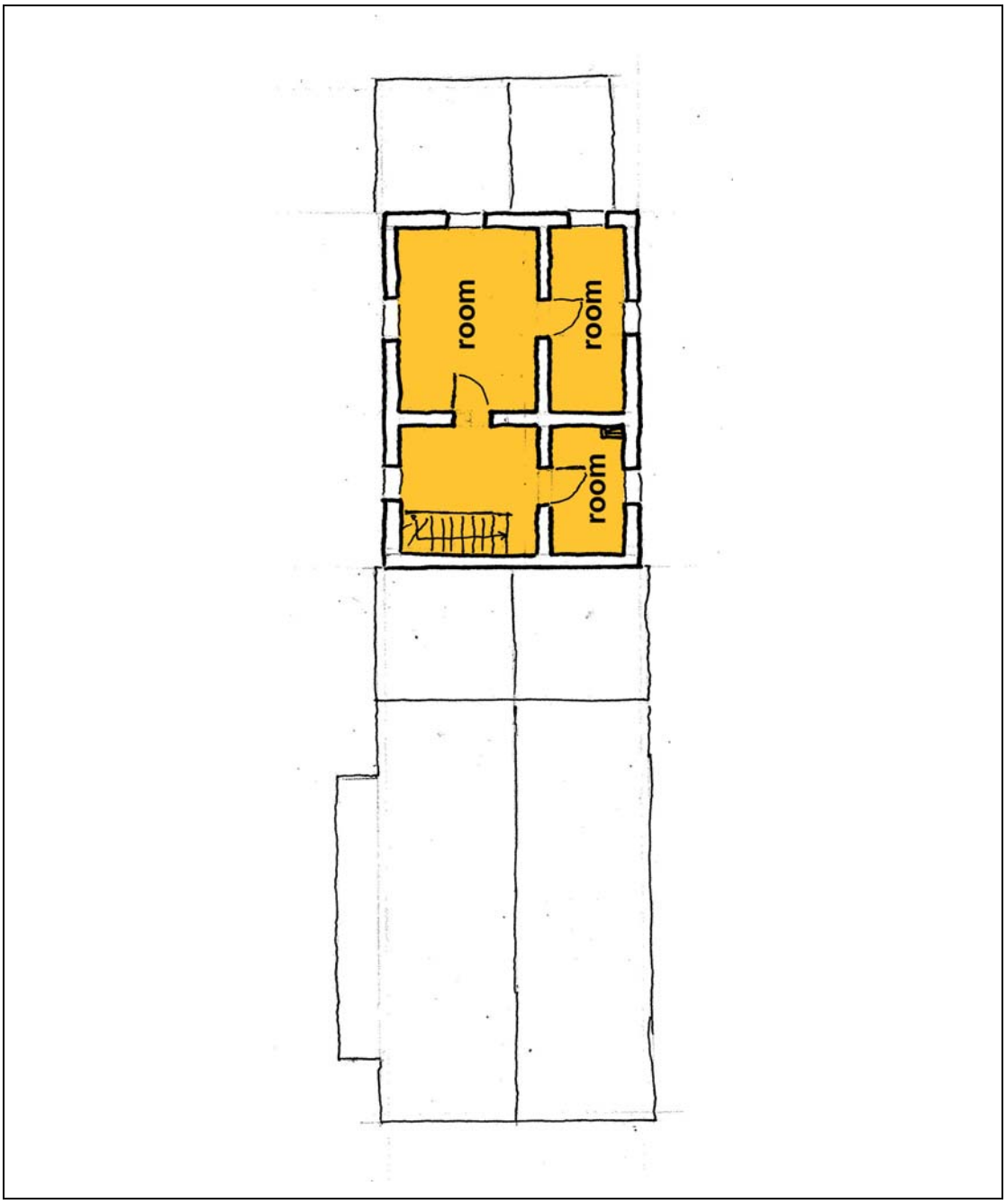


Fig.2.32: First floor plan of Çamlık main station building

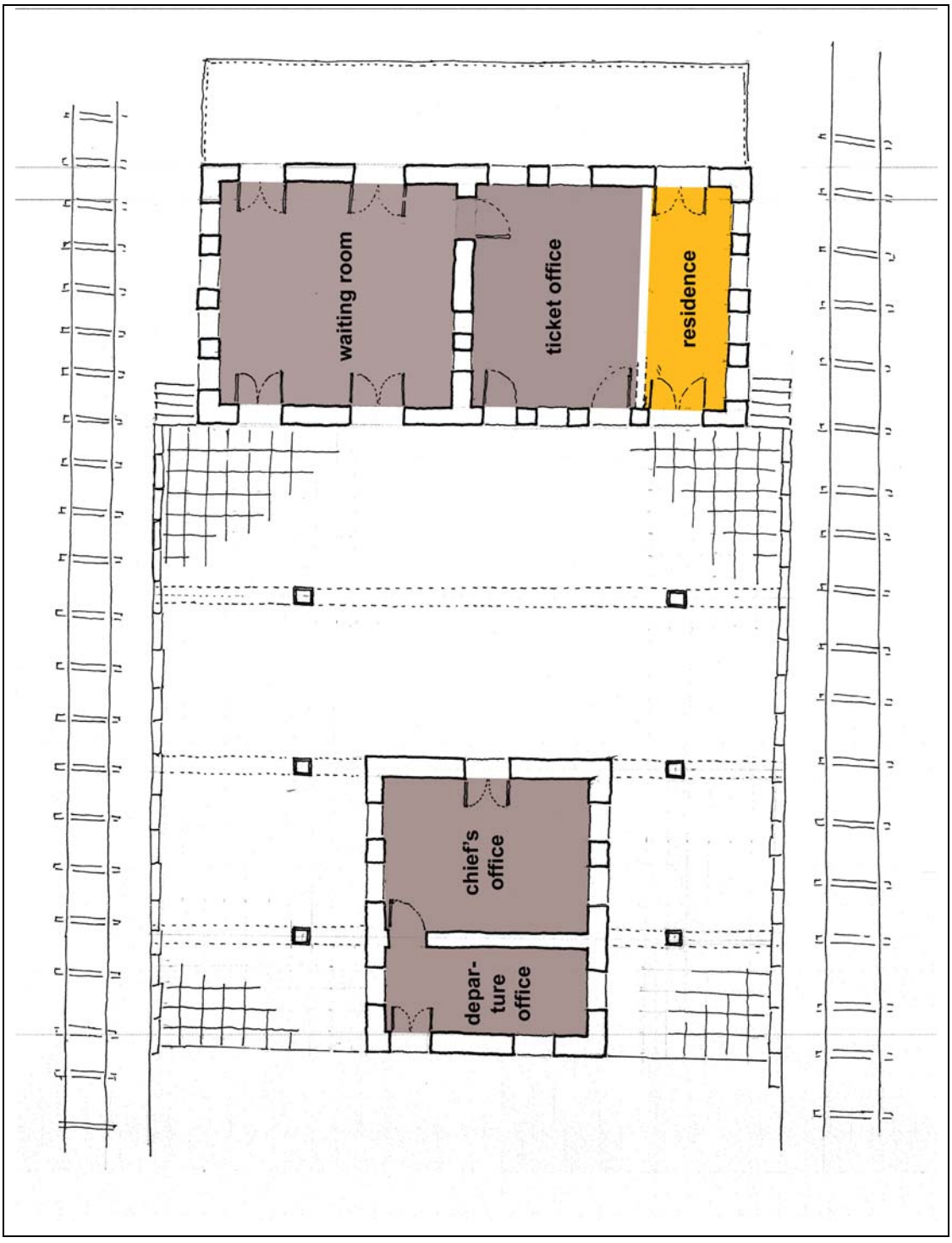


Fig.2.33: Ground floor plan of Kemer station

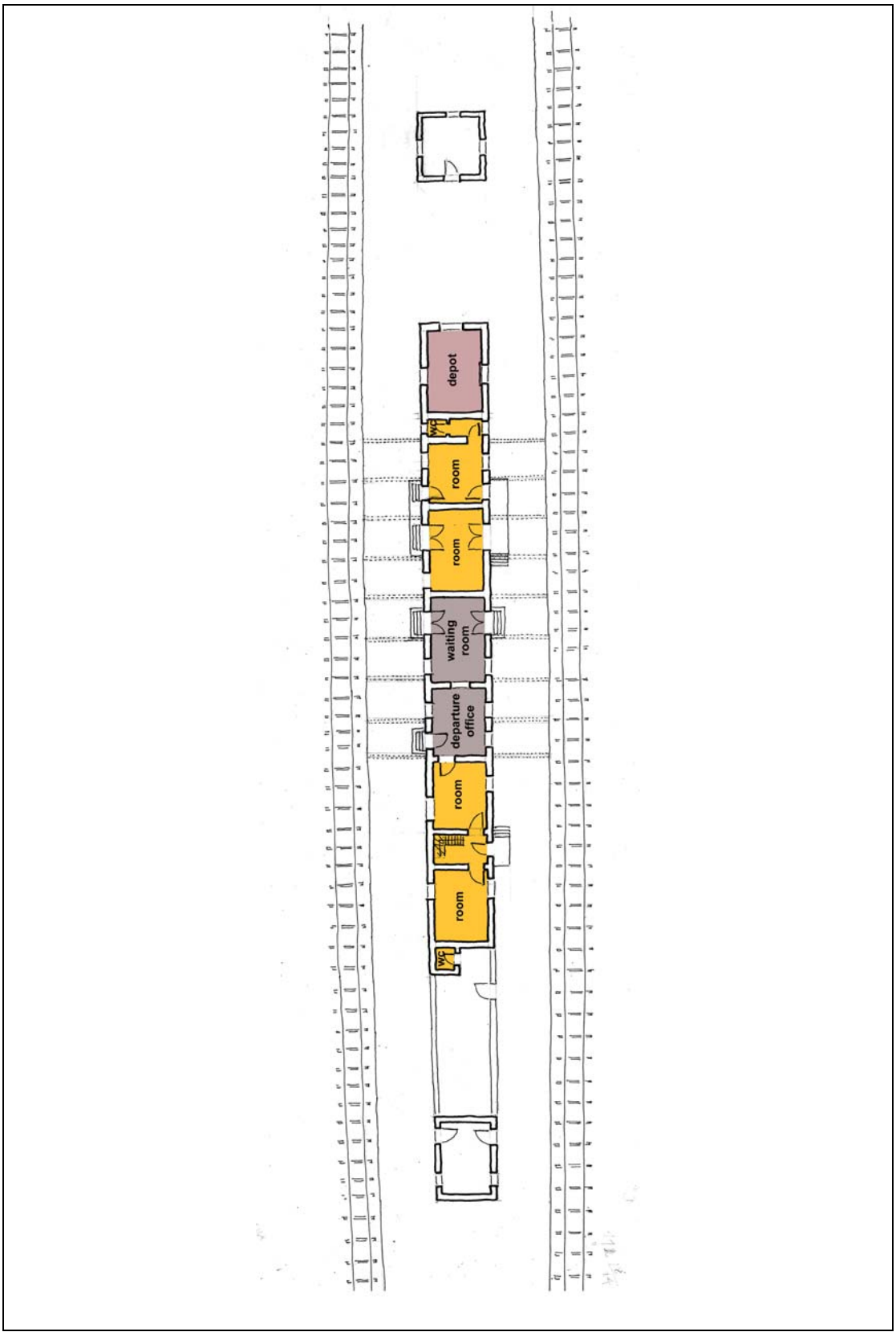


Fig.2.34: Ground floor plan of İncirliova station

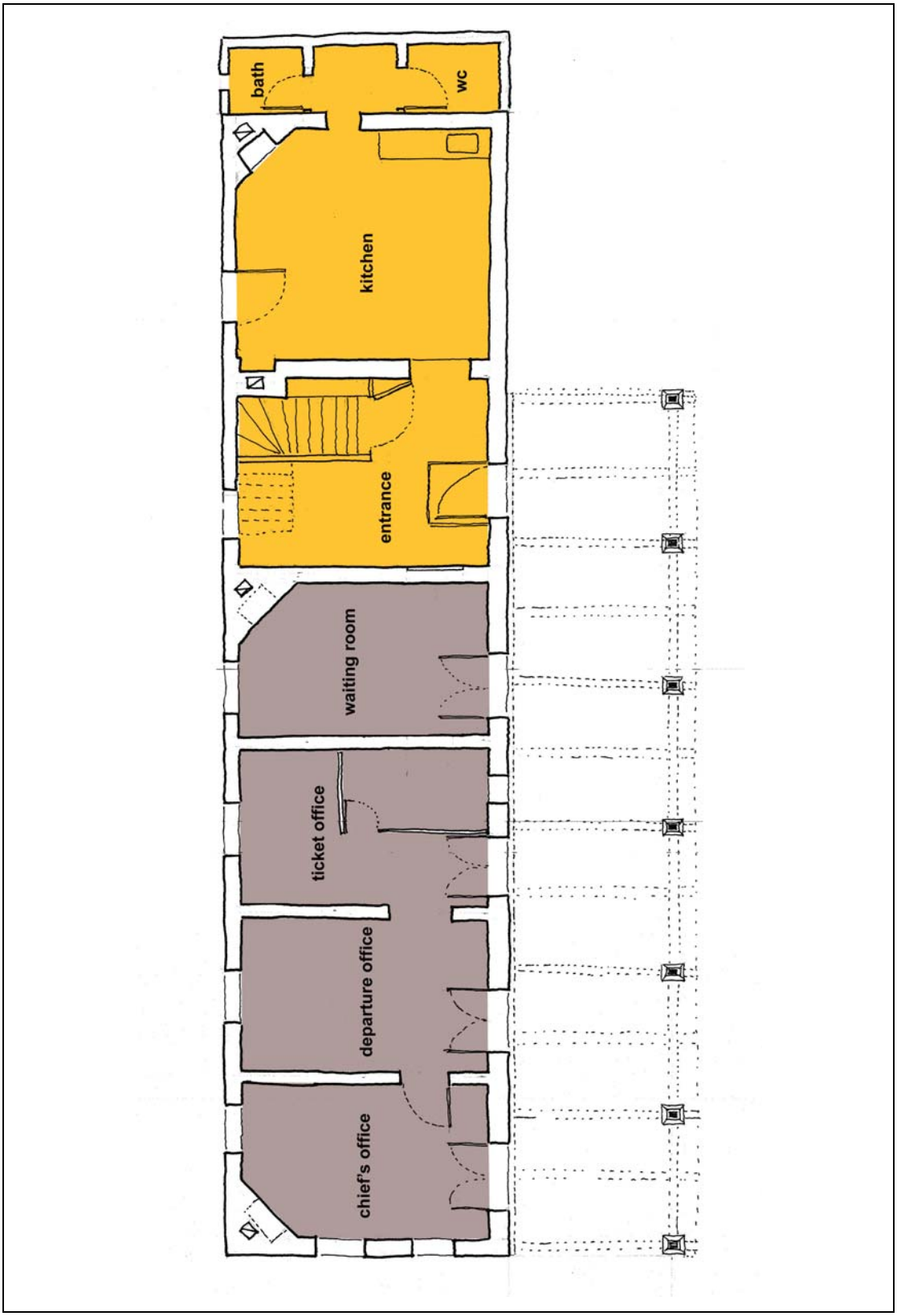


Fig.2.35: Ground floor plan of Selçuk main station building

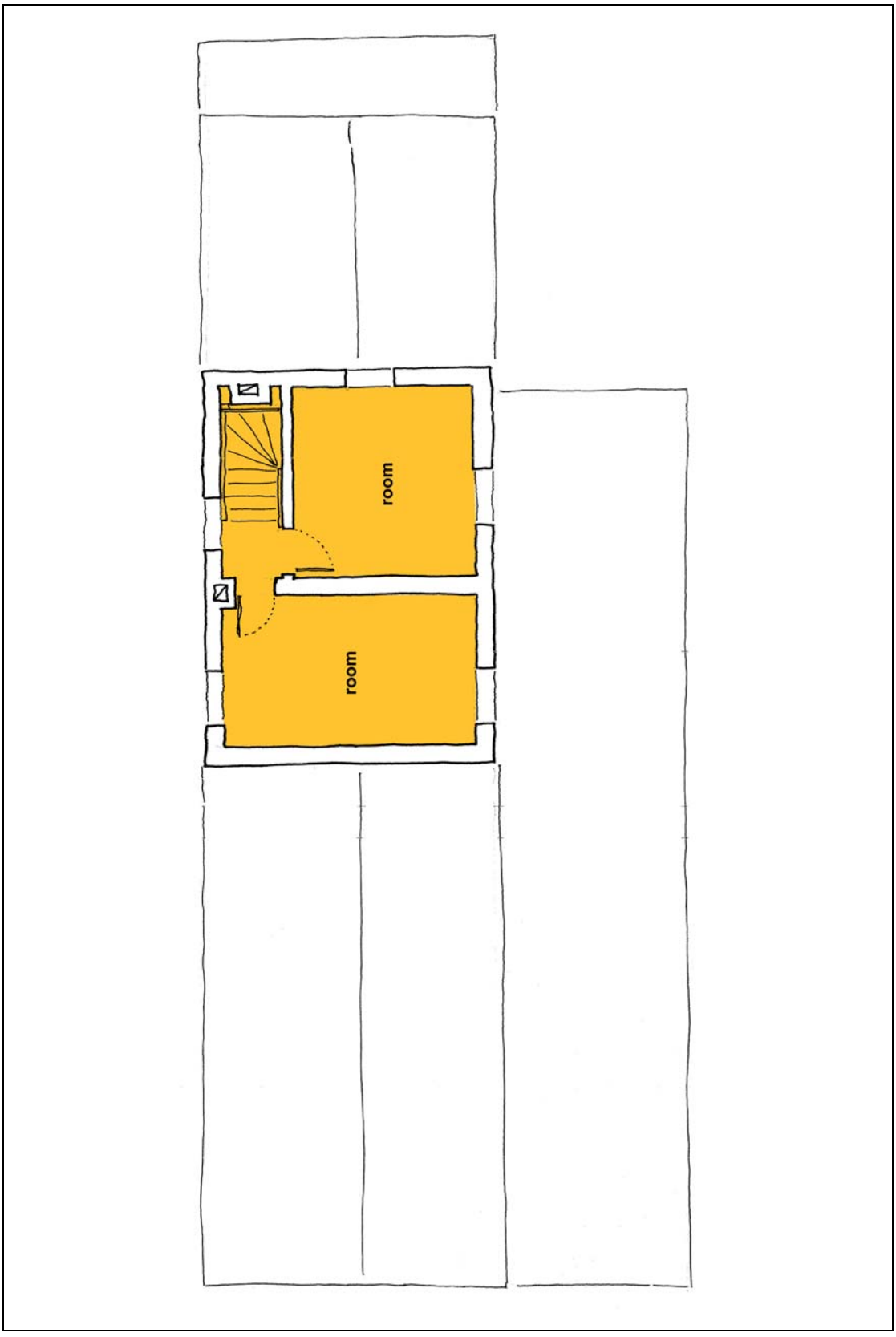


Fig.2.36: First floor plan of Selçuk main station building

2.2.2.2. The Water Depots

The water depots are the most interesting part of the stations. However, after the mid of 1980's the steam locomotives were changed with the diesel ones and the water depots which were needed to fill the steam locomotives with water, lost their functions. The stations close to city centres, Kemer, Şirinyer and Gaziemir have no water depots. They can be seen in all stations starting with the Cumaovası station until the Aydın station.

The water depots are usually a stone tower with metal reservoirs on top of it. In stone tower there is an extra space where the piping equipment was installed (fig.3.29, fig.3.30).

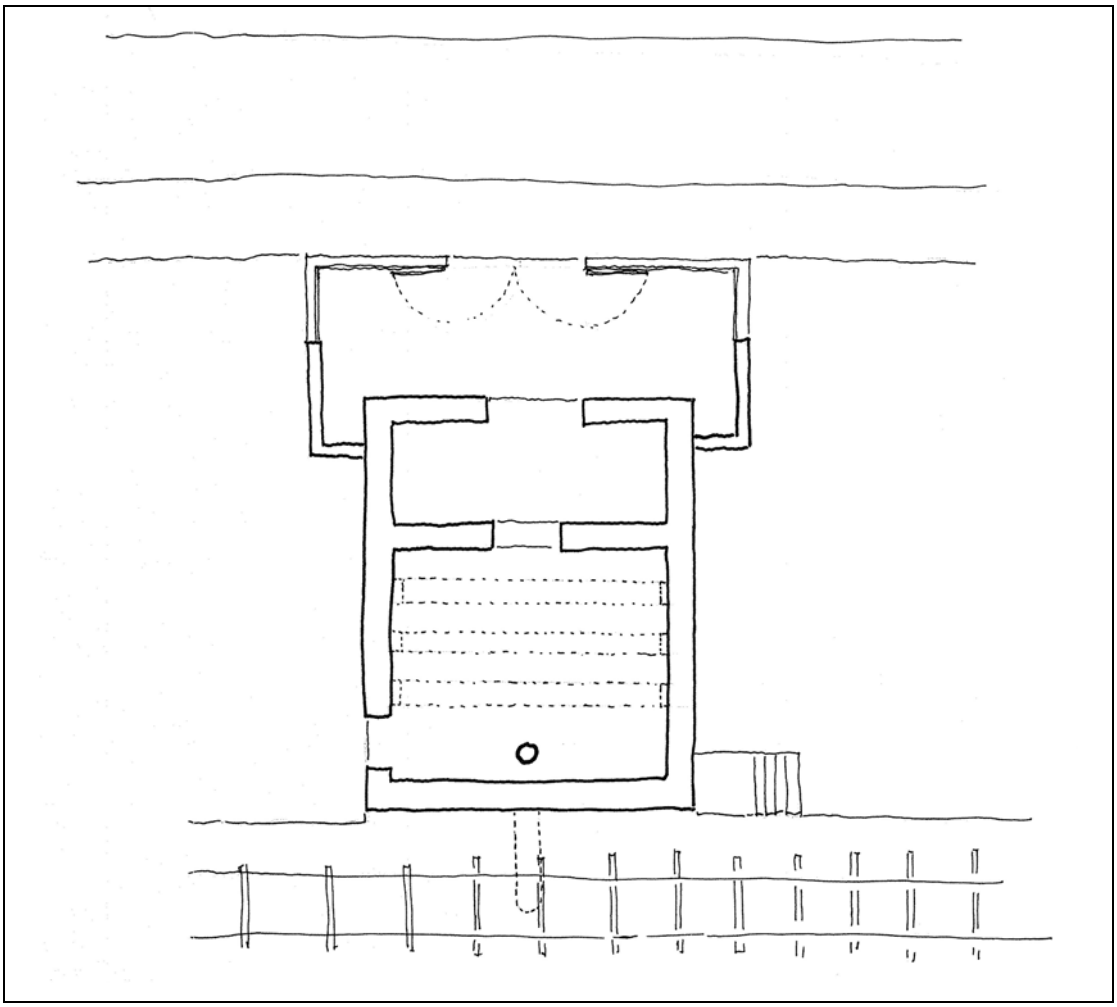


Fig.2.37: The plan of Selçuk station water depot

Fig.2.38: The Selçuk station water depot

2.2.2.3. The Depots

The Depots are the single storage spaces located either as a single building or a part of the main station building. The dimensions are variable due to the economic activity of the station. They are two storey height buildings. In Ortaklar station the depot building have a second floor (fig.3.31, fig.3.32, fig.3.33).

Fig.2.39: Ortaklar station depot building

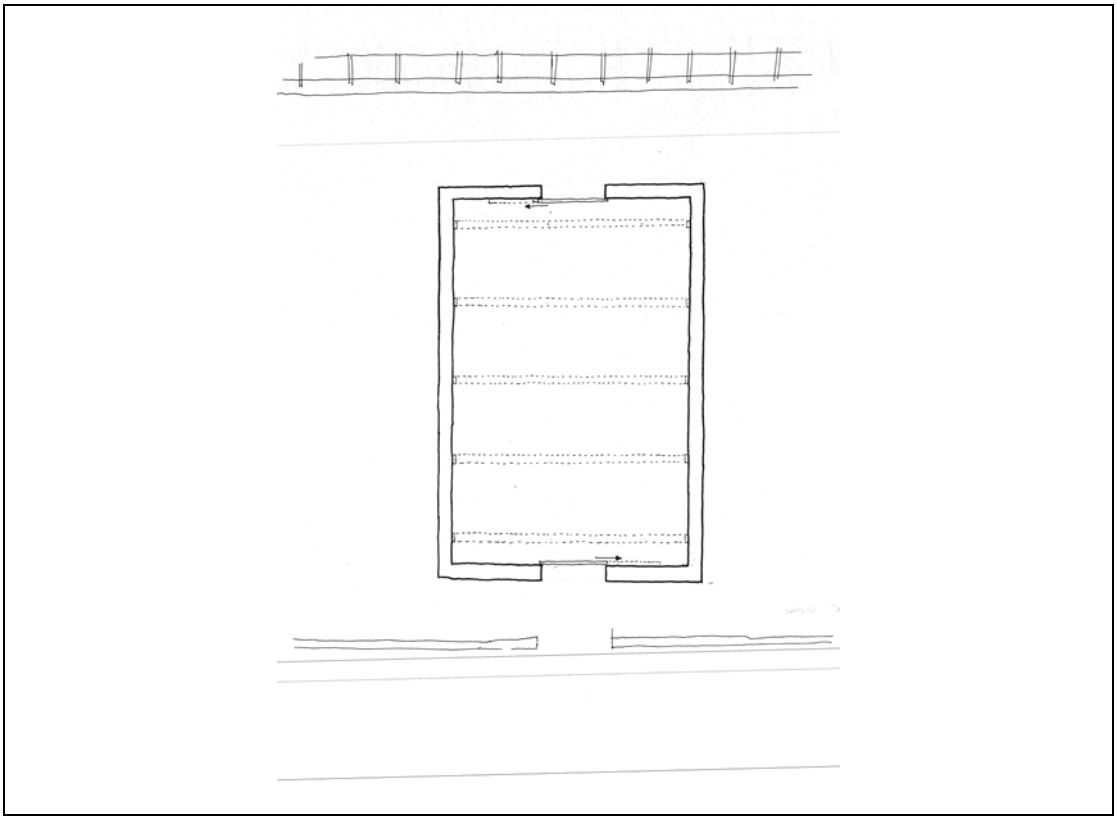


Fig.2.40: The plan of the Selçuk station depot

Fig.2.41: The Selçuk station depot

2.2.2.4. The Maintenance Buildings

The maintenance and repair buildings are found in two station; Alsancak Termini and Çamlık Station.

In Çamlık station maintenance buildings are two adjacent buildings. There are three ateliers and three offices in the buildings. One of the atelier is small then the others. The others were designed to let the locomotives and rolling stocks enter the buildings. They are the part of the Locomotive museum in Çamlık (fig.3.34, fig.3.35, fig.3.36).

2.2.2.5. The Designation Status

The designation status of the station complexes is shown in the table 2.5. It can be considered from the table that only Çamlık station was designated as complex. In the other stations some of the buildings have been designated as singular elements.

Table 2.5: The designation status of the station complexes

Architecture	İzmir	Hilal	Kemer	Şirinyer	Gaziemir	Adnan Menderes	Cumaovası	Develiköy	Pancar	Torbalı	Tepeköy	Sağlık	Selçuk	Çamlık	Ortaklar	Germencik	İncirliova	Aydın
Main Station Offices		Totally Demolished	Designated	Designated	Information not found	New Station International Airport	Information not found	Information not found	Information not found	Information not found	Information not found	Information not found	Designated	Designated	Designated	Designated	Not Designated	Not Designated
Residence			Designated	Designated	Information not found		Information not found	Information not found	Information not found	Information not found	Information not found	Information not found	Designated	Designated	Not Designated	Not Designated	Designated	Not Designated
Depot			Not Designated	Not Designated	Information not found		Information not found	Information not found		Information not found			Designated	Designated	Not Designated	Not Designated	Not Designated	Designated
Water Depot							Information not found							Designated	Not Designated	Not Designated	Not Designated	Not Designated

Fig.2.42: The maintenance buildings in Çamlık station

Fig. 2.43: Inside view of the atelier

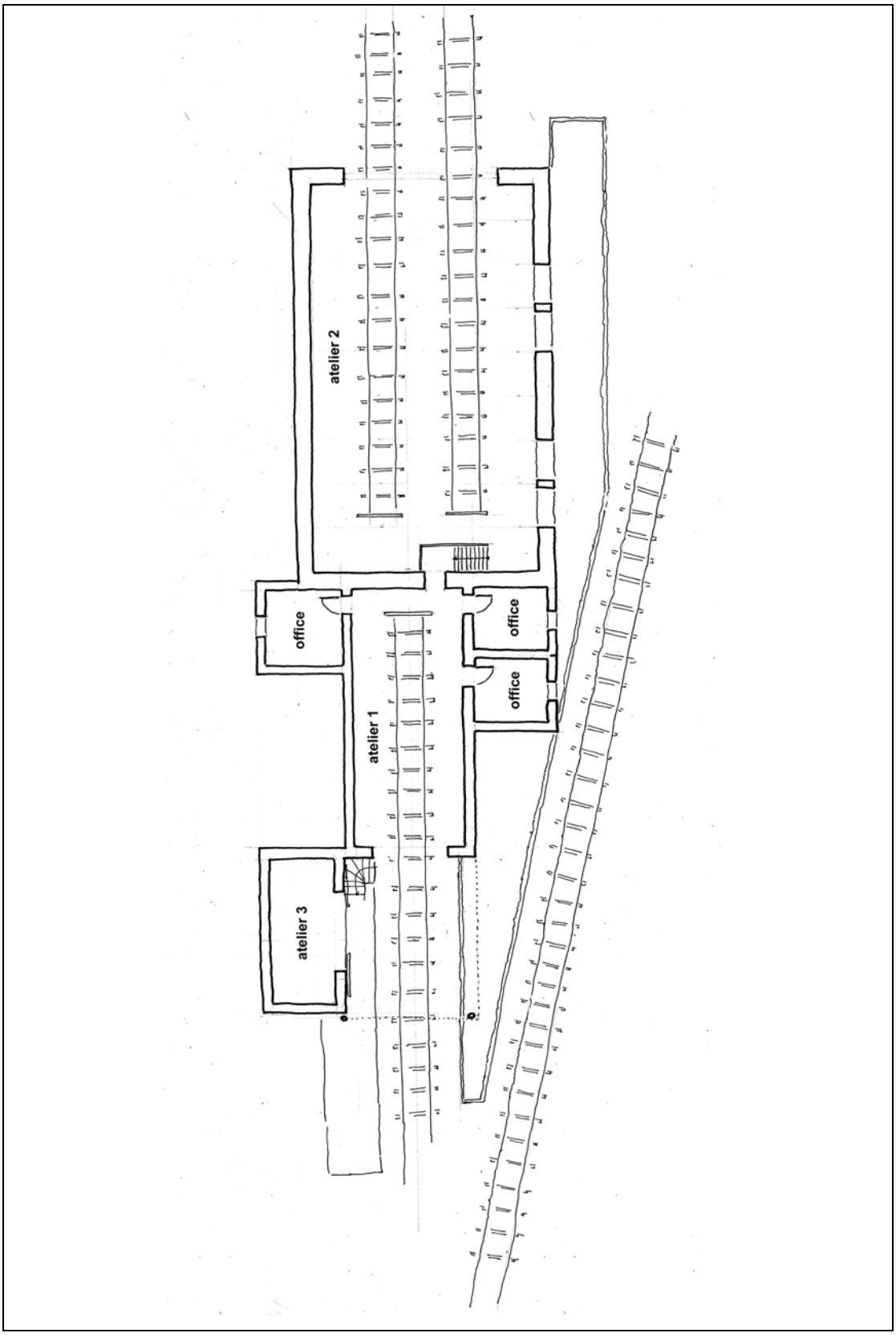


Fig.2.44: The plan of maintenance buildings in Çamlık station

2.2.3. Structural Systems

There are two types of structural system in the station building; stone masonry with timber flooring and brick masonry with timber flooring. All the buildings of the İzmir – Aydın line, which are built by the British company, except Çamlık Station buildings and Torbalı main station building are stone masonry (table 3.3).

Both brick and stone masonry buildings have stone foundation. These stone foundations are 75cm walls in thickness. Between the foundation walls there are spaces under the ground floor. These spaces have small openings at the façade to ventilate the foundation (fig.3.37). This is a feasible solution for preventing common rising damp problem in the region. In some buildings, during interventions, these spaces and foundation was filled with concrete which caused serious rising damp problems (fig.3.38, fig.3.39, fig.3.40).

Both foundations and walls are rubble stone in stone masonry buildings. At the corners, cut stone were used (fig.3.41). In Selçuk station the corners stones are reused (fig.3.42). In two examples, in Şirinyer and Kemer stations, instead of cut stones, brick was used at the corners. The windows and doors have stone jambs. At the lower level and upper level of the window jamb there are two lines of brick in stone walls. It repeated at the upper floor (fig.3.43).

Fig. 2.45: The openings to ventilate the foundation and platform pavement, Kemer station

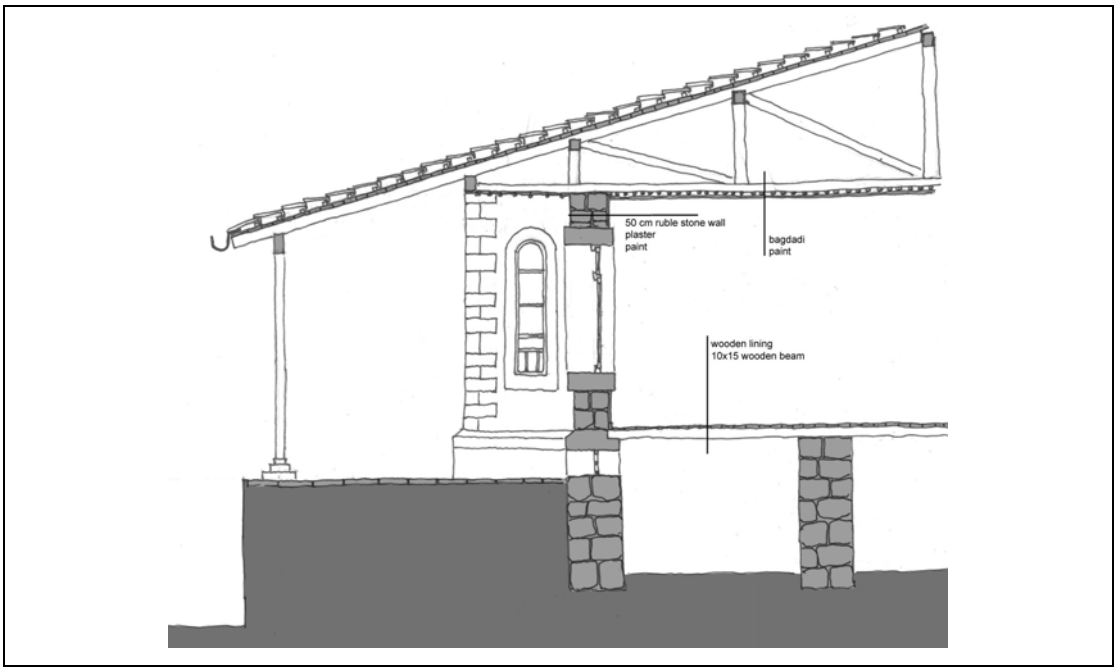


Fig.2.46: Section showing system details of stone masonry single-storey station building

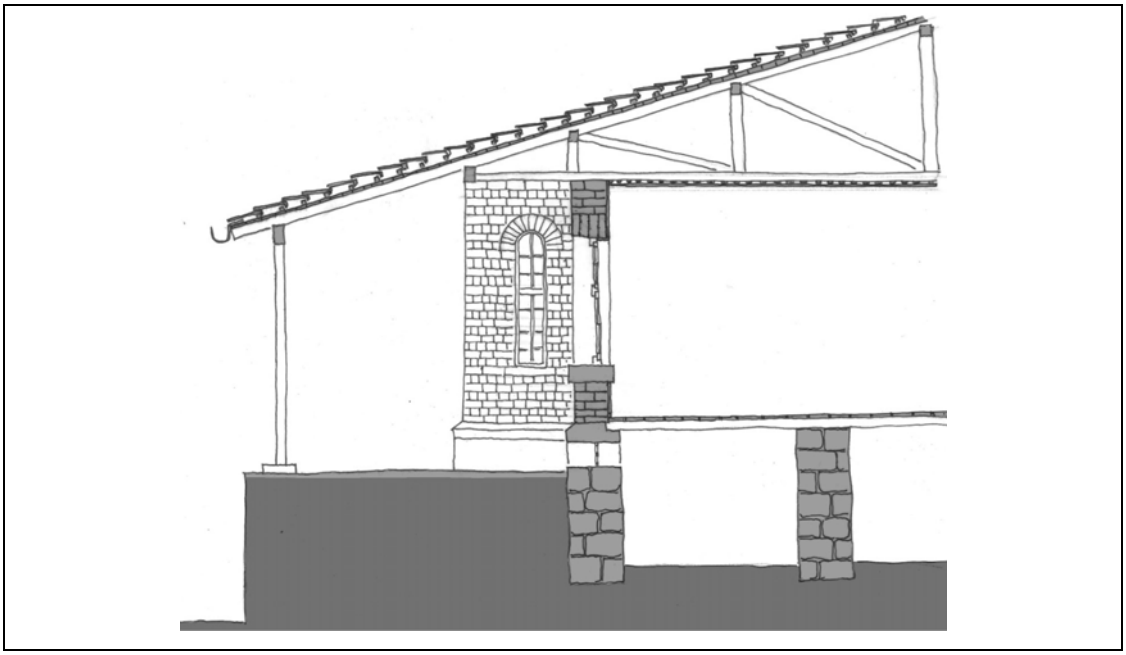


Fig.2.47: Section showing system details of brick masonry single-storey station building

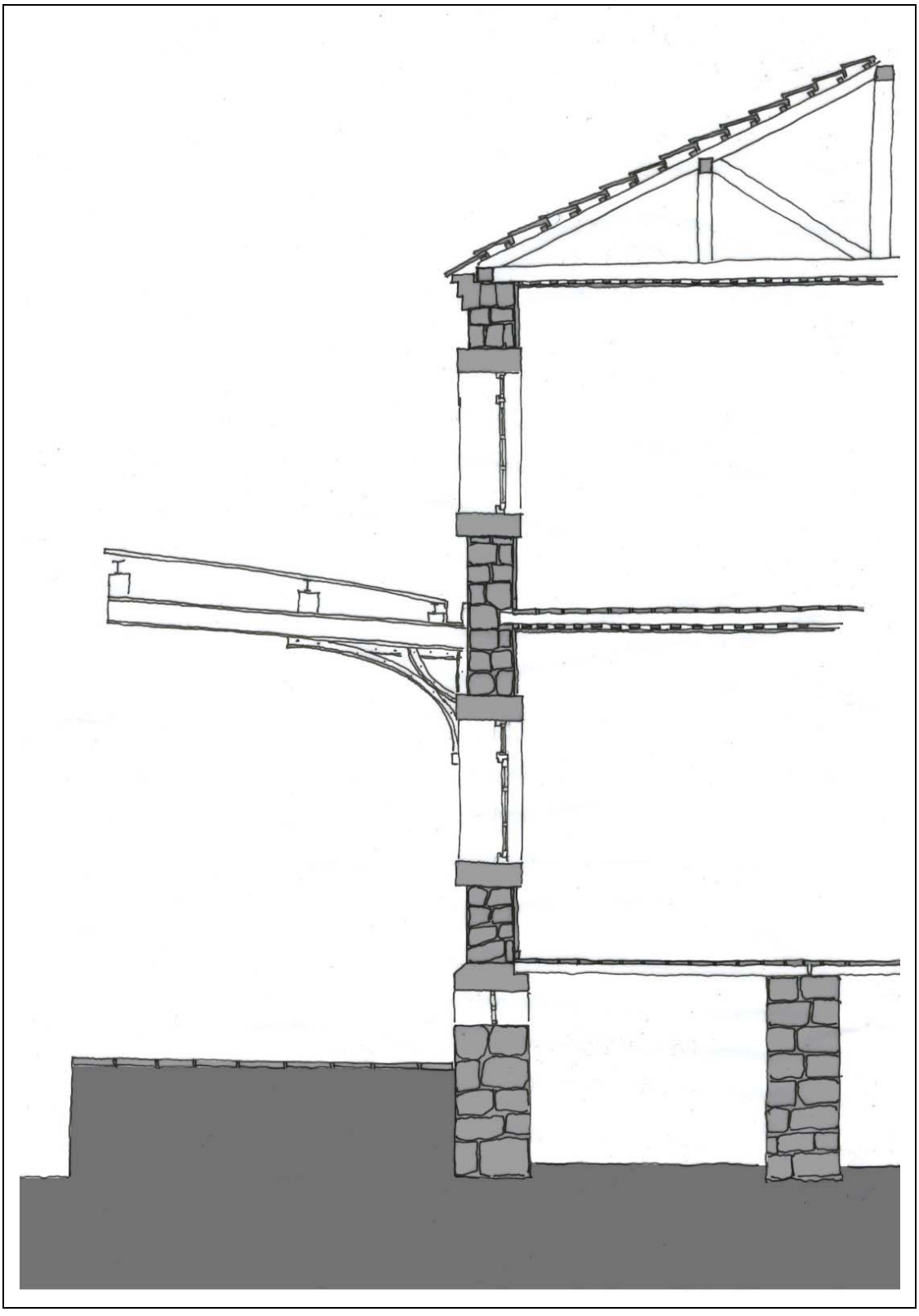


Fig.2.48: Section showing system details of stone masonry two-storeys station building

Fig.2.49: Cut stone at the corners, Gaziemir station

Fig.2.50: The reused stones in Selçuk station

Fig. 2.51: Façade of İncirliova station

All floors are made of timber. In İncirliova stations first floor was supported by (I) beams. The roofs are either pitch or hipped roof. The structural elements of the all roofs are wooden. The depot roofs are supported by the wooden truss.

The brick masonry buildings have the same foundation system. The construction method of the brick walls are English method; one line longitudinally and one line in with (fig.3.44). The windows have not jambs in Torbalı station, however, Çamlık station building have brick jambs. The buildings in Çamlık station are partly stone masonry. They have reused stones which were carried from Ephesus (fig.3.45).

The platform sheds are cantilever steel structure in two – storey main station buildings (fig.3.48). However the Kemer station shed have different structure standing between two station buildings. This is the unique example in İzmir – Aydın railway line. It is composed of three pitch roof standing over

six steel columns with steel trusses. Above the trusses there are wooden lining (fig.3.46, fig.3.47).

Fig.2.52: Window and brick construction from Torbalı station

Fig.2.53: The maintenance buildings in Çamlık station.

Fig.2.54: Kemer station platform and shed

Fig.2.55: Kemer Station shed columns, with water drainage pipe in the middle

Fig.2.56: Ortaklar station platform shed

The buildings have not plastering except the buildings built after the Republic. The spaces have plasters and paints. The floors have wooden lining. The ceilings are wood – lath (bagdadi). Roofs have Marseille type tiles.

In İncirliova, Ortaklar, Selçuk, and Şirinyer main station buildings, the foundation ventilation spaces were filled with concrete and the floor finishing were transformed to mosaic tiles. In Kemer station, the floor finishing is mosaic.

Original platform pavement does not remain except Kemer station. The original pavement is 40x40cm tiles (fig.3.37). In other stations, the pavement has been altered with concrete tiles.

Table 2.6: Structural Systems and Construction Materials of main station buildings

	Ground Level	1st Floor	Roof
Hilal	The station building was demolished during the metro construction.		
Kemer	Stone masonry with timber flooring	Stone masonry with timber flooring	Timber
Şirinyer	Stone masonry with timber flooring	Stone masonry with timber flooring	Timber
Gaziemir	Stone masonry with timber flooring		Timber
Adnan Menderes	This station was constructed in 1980's		
Cumaovası	This station was constructed in 1950's		
Develiköy	This station is closed		
Pancar			
Torbalı	Stone sub-foundation, brick masonry with timber flooring		Timber
Tepeköy	This station was constructed in 1950's		
Sağlık	This station is closed		
Selçuk	Stone masonry with timber flooring	Stone masonry with timber flooring	Timber
Çamlık	Stone sub-foundation, stone and brick masonry with timber flooring	Brick masonry with timber flooring	Timber
Ortaklar	Stone masonry with timber and steel flooring	Stone masonry with timber and steel flooring	Timber
Germencik	This station was constructed in 1950's		
İncirliova	Stone masonry with timber flooring	Stone masonry with timber flooring	Timber
Aydın	This station was constructed in 1950's		

2.2.4. Architectural Elements

All of the fenestrations are wooden including doors. The windows are single. There are always two wings in the windows except the Torbalı stations windows and Gaziemir ticket office windows. The windows have three or four division. Originally, all the windows have shutters but a few of them remained (fig.3.49, fig.3.50).

Doors are either one wing or double wings. Especially the inner doors are single wing. The outside doors are mainly double doors. The majority of the outside doors are glazed (fig.3.51).

There are refined examples of cornices in the stations. The only stone cornice example is situated at the Şirinyer station. The other cornices are brick. Çamlık and Selçuk stations have same brick cornice which is composed of projected double layer of brick. İncirliova and Ortaklar station buildings have different type of brick cornice which is composed of perpendicular brick put on top of two brick layer. In Kemer station (fig.3.52, fig.3.53, fig.3.54, fig.3.55).

Fig.2.57: Ticket office window of Gaziemir station

Fig.2.58: Windows of Gaziemir, Ortaklar and Torbalı Stations.

Fig.2.59: Doors of İncirliova, Kemer and Selçuk Stations

Fig.2.60: The roof cornice of Şirinyer station depot building

Fig.2.61: The roof cornice of Selçuk main station building

Fig.2.62: The roof cornice of İncirliova main station building

Fig.2.63: The roof cornice of Kemer main station building

2.2.5. Building Conditions

2.2.5.1. Structural Material Decays and Problems

There are three material decay types in the stations. These are discoloration, material loss and disintegration due to rising damp and rain penetration.

There are discoloration problems in all of the buildings. In foundations and ground floors, the discoloration problem is obvious. The alterations in the foundation systems and platforms are basic reasons. The ground water is high in the region. The ventilation spaces in the foundations were solving this problem while working as a drainage system. However, these spaces were filled without planting the drainage system for the foundation. The changes in the platform dimensions and materials increased the rising damp problem. As a result, in all of the ground floors, even first floors, the discoloration and material loss are observed (fig.3.56, fig.3.57).

Other cause of the material decay is the rain penetration. All of the roofs have problems due to lack of maintenance. Especially the roof tile loss is the major problem. Therefore, the roofs are not able to function properly and the cause discoloration and material loss problems (table 3.4).

Fig.2.64: Discoloration and cracks in the main station building of Gaziemir station

Fig.2.65: Material loss due to rising damp in Torbalı main station building

2.2.5.2. Structural Deformations

There are structural cracks in all of the main station buildings except Kemer and İncirliova stations. In three of the buildings which have structural cracks, deformation was observed. These are Torbalı, Gaziemir and Ortaklar main station building (fig.3.58, table 3.5).

There are two reasons for the deformations and cracks. First one is the earthquakes in the region. The other reason is the changes in the static of the buildings due to the alterations in foundations and platforms.

The depot, water depot buildings and maintenance buildings do not have any structural cracks or deformations.

Fig. 2.66: Structural cracks in Gaziemir and Torbalı main station buildings

Table 2.7: The structural material decay in main station buildings

	Ground Level	1st Floor	Roof
Hilal	The station building was demolished during the metro construction.		
Kemer	Discoloration in stone due to rising damp	Discoloration in stone due rain penetration and heavy traffic	Material loss in tiles – rain penetration
Şirinyer	Discoloration and material loss in stone – material loss in joints	Discoloration and material loss in stone – material loss in joints	Material loss in tiles – rain penetration
Gaziemir	Discoloration and disintegration in timber – discoloration in stone and material loss in joints		Disintegration even fungi in timber – rain penetration
Adnan Menderes	This station was constructed in 1980's		
Cumaovası	This station was constructed in 1950's		
Develiköy	This station is closed		
Pancar			
Torbalı	Discoloration in timber - Discoloration in stone due to rising damp - Discoloration, material loss and flaking due to rising damp.		Discoloration in timber and material loss in tiles.
Tepeköy	This station was constructed in 1950's		
Sağlık	This station is closed		
Selçuk	Discoloration in stone due to rain penetration	Discoloration in stone due to rain penetration	Rain penetration
Çamlık	Discoloration in timber - Discoloration in stone due to rising damp - Discoloration in brick due to rising damp		Rain penetration
Ortaklar	Discoloration in timber – Discoloration and material loss due to rising damp	Discoloration and material loss due to rising damp	Discoloration in timber and material loss in tiles and rain penetration
Germencik	The station was constructed in 1950's		
İncirliova	Discoloration in timber due to rain penetration – Discoloration in stone due to rising damp	Discoloration due to rain penetration	Discoloration in timber due to Rain penetration
Aydın	The station was constructed in 1950's		

Table 2.8: Structural cracks and deformations in main station buildings

	Ground Level	1st Floor	Roof
Hilal	The station building was demolished during the metro construction.		
Kemer	No deformation No crack	No deformation No crack	No deformation
Şirinyer	No deformation Structural cracks	No deformation Structural cracks	No deformation
Gaziemir	Deformation Structural cracks		deformation
Adnan Menderes	This station was constructed in 1980's		
Cumaovası	This station was constructed in 1950's		
Develiköy	This station is closed		
Pancar			
Torbalı	Deformation Structural Cracks		No deformation
Tepeköy	This station was constructed in 1950's		
Sağlık	This station is closed		
Selçuk	No deformation Structural cracks	No deformation Structural cracks	No deformation
Çamlık	No deformation Structural cracks	No deformation Structural cracks	No deformation
Ortaklar	No deformation Structural cracks	Deformation Structural cracks	
Germencik	This station was constructed in 1950's		
İncirliova	No deformation No crack	No deformation No crack	No deformation
Aydın	This station was constructed in 1950's		

2.2.5.3. Material Decay in Finisihing and Architectural Elements

There are serious problems in the fenestrations and doors of the all buildings. The discoloration and material loss was observed in the windows. Moreover, in all stations the windows and doors do not function properly.

Discoloration and material loss in finishing of inner spaces due to rising damp and rain penetration, was observed. Only in Gaziemir station the spaces have reasonable finishing. All of the other stations spaces, the plaster and paint are in bad condition (fig.3.59).

Fig.2.67: Finishing problems in Çamlık and Kemer main station buildings

2.2.5.4. Overall condition of the buildings

Three classes of degree were determined to; bad, normal and good. If a building is healthy in structure system, if it has not structural material decay and if the finishing and architectural elements condition is well, the the condition of the building is determined as good. If a building have structural problem, and material decay, the condition of the building is bad. If the building have only finishing problem then the building is normal (table 3.6).

Table 2.9: The building condition classification criteria

	Structural crack and deformation	Material decay	Finishing and architectural element problems
good			
normal			X
bad	X	X	X

According to this classification, all the main station buildings except İncirliova and Kemer stations are in bad condition. İncirliova and Kemer mainstation buildings are in normal condition (table 3.7).

The depot buildings are in normal condition since they have only finishing problem.

The water depots are in normal condition.

The maintenance buildings which were transformed to the museum are in good condition.

Table 2.10: Main station building condition

	Structural crack and deformation	Material decay	Finishing and architectural element problems
Hilal	The station building was demolished during the metro construction		
Kemer			X
Şirinyer	X	X	X
Gaziemir	X	X	X
Adnan Menderes	This building was constructed in 1980’s		
Cumaovası	This building was constructed in 1950’s		
Develiköy			
Pancar			
Torbalı	X	X	X
Tepeköy	This building was constructed in 1950’s		
Sağlık			
Selçuk	X		X
Çamlık	X		X
Ortaklar	X	X	X
Germencik	This building was constructed in 1950’s		
İncirliova			X
Aydın	This building was constructed in 1950’s		

CHAPTER 3:

EVALUATION OF İZMİR – AYDIN RAILWAY LINE

3.1. Evaluation of General Context and Features

This chapter focuses on evaluation of the data given in chapter two and chapter three by using the concepts and general framework given in the introduction. It has been stressed that the railway heritage is comparatively new and developing concept within the conservation discussion. The important criteria given within the first chapter are:

1. A creative work indicative of genius
2. The influence of, and on, innovative technology
3. Outstanding or typical example
4. Illustrative of economic or social developments (Coulls, 1999:8-11)

As it was discussed from the beginning of the thesis, railway is a complex phenomenon that is composed of several layers. These layers are grouped under the social part and the technological part of the railway. In the second chapter, the social parts and general context of the İzmir – Aydın railway were explained. These were its history, the geographical features of the land where İzmir – Aydın railway line passes, the social effects and aspects, the archeological and touristic features.

The technological part of the İzmir – Aydın railway line was explained in the third chapter including the situation and condition of the railway stations. The architectural features were the main focus of this chapter.

Considering these parameters as base for the assessment of İzmir – Aydın railway line the values, problems and potentials are defined in this chapter in two stages regarding the general context and the architectural features of each station complex.

Within the general context, history, geography, tourism and archeology are considered as parameters defining the values and potentials in İzmir – Aydın railway line. Economy is also partially included within this framework.

On the other hand railway is an interdisciplinary subject that needs to be surveyed by the several experts and specialists including historians, geographers, engineers, economists, socialists, archeologists and architects. Since this thesis is focused on the architecture and conservation of architectural heritage of İzmir – Aydın railway, the evaluation of the architectural features is much more detailed then other layers. The need for specializations to form a complete evaluation can be covered by the different works created by a multidisciplinary team.

As a consequence, the layers that explained in the second chapter are evaluated with tables 3.1, 3.2, 3.3, 3.4 and 3.5. The table 3.1 and 3.2 summarize the second chapter which shows the general features of the İzmir – Aydın railway. The tables 3.3, 3.4 and 3.5 show the values and potentials of İzmir – Aydın railway line. The values and potentials are examined together with all of the layers in the tables since the line need to be considered in unity with its all features.

3.1.1. History

İzmir – Aydın railway is one of the first steps of Ottoman modernization. As the symbol of technological development of late Ottoman period, it has peculiarities in the in the history of Ottoman Empire as well as Turkish Republic.

As it is mentioned in the second chapter, the history of İzmir – Aydın railway line has important place in Ottoman History as well as the history of Europe considering with international relationships. Being the first railway line in the Anatolia İzmir – Aydın railway affected the both local and international policy of the Ottoman Empire during its last period.

İzmir – Aydın railway is one of the keys to read, explain and experience the late Ottoman history. The political, economical and social development of this period can be materialized and translated by using İzmir – Aydın railway as a whole.

The development of the region has been affected with the İzmir – Aydın railway line. When compared the situation in the region at the beginning of the railway and at the beginning of the 21st Century, it can be argued that the potential of the region has been discovered deeply after the railway construction. The economical development drawn by the railway construction sustained until 21st century (Table 3.1 and 3.2).

Therefore, the history and the railway have deep relation as mentioned in the first and second chapter. And as an important value, history found a chance to symbolize itself with railway.

3.1.2. Geography

The natural heritage of the region is remarkable as mentioned in the second chapter.

Especially the Aydın Mountains section and the slopes around them are convenient for the light nature sports such as trekking. Moreover, the region presents good alternatives for the rising interests to nature sports. Since the railway line passing through the valuable land in terms of natural beauty, it has a great potential for such alternative activities.

3.1.3. Economy

Economy of the region is mainly based on agriculture and agricultural industry as mentioned in the second chapter. The economical framework that railway draw since mid of 19th century is still effective in the development of the region.

The agricultural economy and the industry based on agriculture which was settled in the region with İzmir – Aydın railway. The economical development since mid 19th century has been continuing in this frame work that drawn by the railway as it is explained in the second chapter.

Moreover, tourism is the important sector in terms of economy. Especially for 20 years, the number of touristic establishment is increasing in parallel to the touristic activity which was started İzmir – Aydın railway. The discoveries

in archeology it the help of railway and the service offered by the railway has important role in the development of the tourism sector in the region.

3.1.4. Tourism and Archeology

Being as a second layer in the general context, the tourism and archeology are the second biggest value and potential of the region. Both natural and archeological heritage are important resources as mentioned before. In fact, the use of this potential in proper way is related with creating suitable alternative for current situation in tourism sector.

The first value is the archeological sites nearby the İzmir – Aydın railway. The four ancient cities which are Ephesus, Metropolis, Magnesia and Tralleis, are already active in terms of tourism. In addition, Smyrna which is situated in İzmir city centre is another important ancient city.

The organic relationship between tourism, archeology and railway was pointed out in second chapter. However this relationship is not obvious and observable. The railway had and still has an important location in the development of Turkish cultural history. Therefore, it is a great tool to explain this relationship and development.

Moreover, the tourist activities in the region related with the archeology are high. As mentioned before, the total number of people who visits these ancient cities is approximately 2 million in each year. Especially, Selçuk is the most important tourism centre in the region. In addition to Ephesus, Magdelena House, St. Jean Basilica, İsa Bey Mosque, Şirince village which is important with its conserved historical environment are important features and heritage that Selçuk has.

The other important touristic potential is the festivals organized in the region during the year. The International Ephesus Culture and Art Festival which is held in the January is the most famous one. In winter time there are other festivals in the region. These are camel wrestling festivals held in January, in Ortaklar and İncirliova. In February in there is camel wrestling

championship in Selçuk. All these activities are important occasions for the region people while they are also enjoyable for tourists.

In summer, Ephesus Art Days and the fig festivals are the important and famous organizations.

Moreover, the Ephesus Museum in Selçuk and Open – Air Locomotive Museum in Çamlık are two famous sites to visit in the region. During the year, they are visited both by local and foreign tourist groups. Especially Locomotive Museum is one of important site to enjoy in the week-ends for the region as TCDD 3rd Region Headquarters mentions. The special train trips were organized in 1991 and 1992 by the TCDD to give service between İzmir – Selçuk – Çamlık.

All of these touristic values and potentials are related with the cultural tourism which is highlighted in the tourism sector. The tourism agencies are creating tours related with the cultural heritage as an alternative for the sea tourism while the tourism sector going towards the cultural tourism. Beside the natural potentials, the cultural heritage is an important potential for the tourism still developing. İzmir – Aydın railway line has large potentials with its all features as tried to be explained in the second chapter.

3.2. Evaluation of Architectural Features

Being the first examples of the railway stations in Anatolia, the İzmir – Aydın railway line buildings have special importance. In architectural point of view, these buildings are one of the earliest examples of the new building types in architectural history. Besides, for almost 150 years, they became the important point of the city life. Therefore, the stations have both architectural and social value.

As mentioned above, these stations are not used efficiently. Since the importance of the railway transportation has been decreasing, the stations lost their importance. As a result, some of the spaces in the stations became out – of use. All the depots in the stations are now out of use due to limited transportation. Moreover, some of the residence and office spaces also are

empty due to the same fact. The distribution of the problem in the stations related with use is shown in the Table 3.6. As it can be seen from the table 53% of the total spaces are out of use in the stations as a common problem.

In addition, the most important potential is the closed stations which are Develiköy, Sağlık, Tepeköy, and Çamlık stations.

This potential is concentrated between Torbalı and İncirliova stations (Table 3.3). The stations near to the İzmir city centre are being used extensively with the suburban train. After Cumaovası station, which is the last stop of the suburban train, the use of spaces of the stations is quite minimum. Moreover, TCDD closed the Develiköy, Sağlık and Tepeköy station due to lack of passenger.

Moreover, in table 3.7, the use of spaces and the condition of the buildings are shown together. It can be seen that, there are relation with out of spaces and the condition of the buildings. The majority of the buildings are in bad condition and the number of out of use spaces in these buildings is high. This shows that the necessary repairment can be make these spaces and buildings ready for the new uses.

3.2.1. Typology

Some common features of the main station buildings can be used to make a typology for the buildings in İzmir – Aydın railway line. As the number of the examples is quite limited, it is not to possible to derive typology for the other auxiliary buildings.

The main station building plan typology can be done according to two criteria; first one is the arrangement of the site plan of the station complex and the second one is the plan arrangement (Table 3.8). As can be seen from the table, the majority of the main station buildings are B1 type which is composed of offices at the ground floor and residence at the first floor. The other common type is A which is the single storey main station buildings. Other types have single examples.

Table 3.1: The features of the İzmir – Aydın railway line region between 1856 – 1900

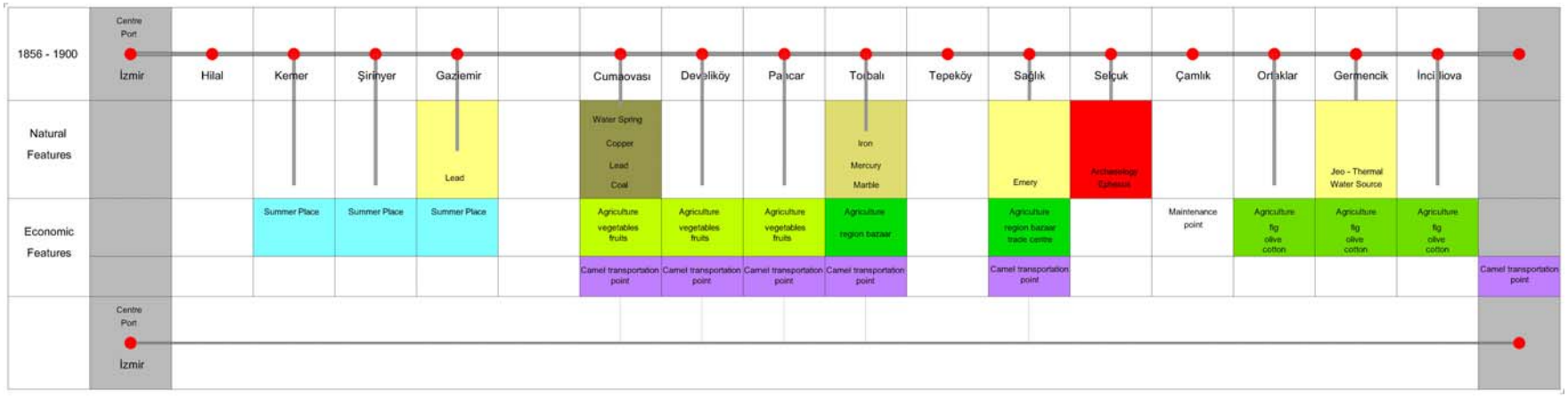


Table 3.2: The features of the İzmir – Aydın railway line region between 2000 – 2005

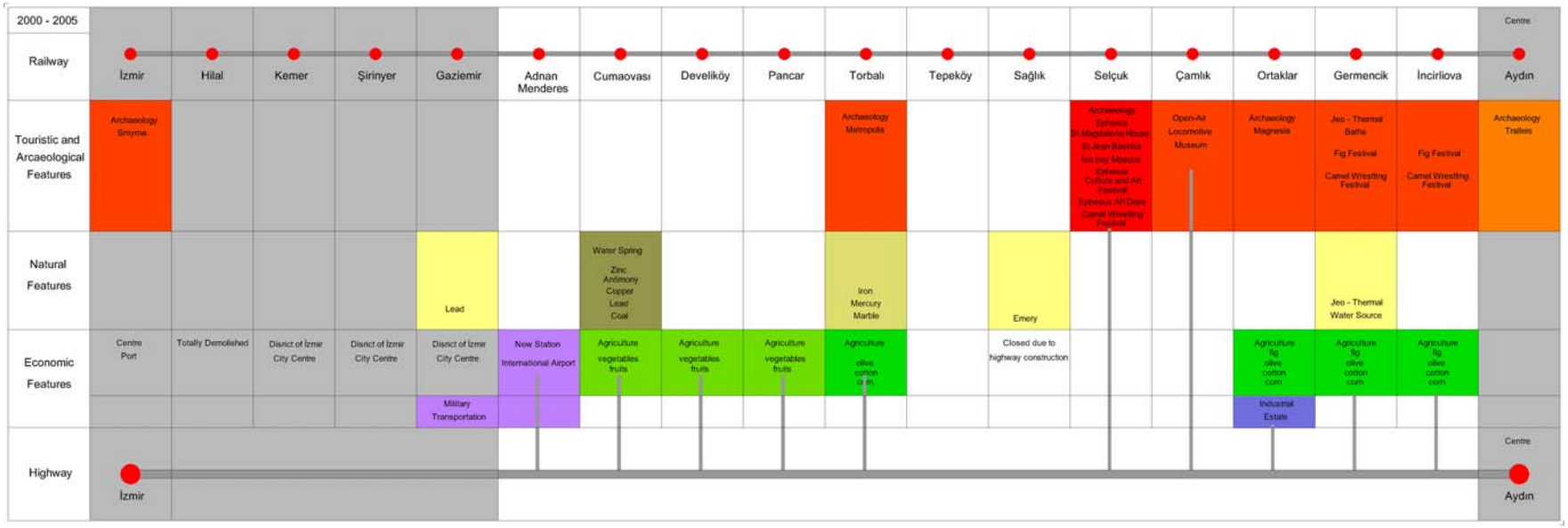


Table 3.3: The potentials of Izmir – Aydın railway line according to the layers

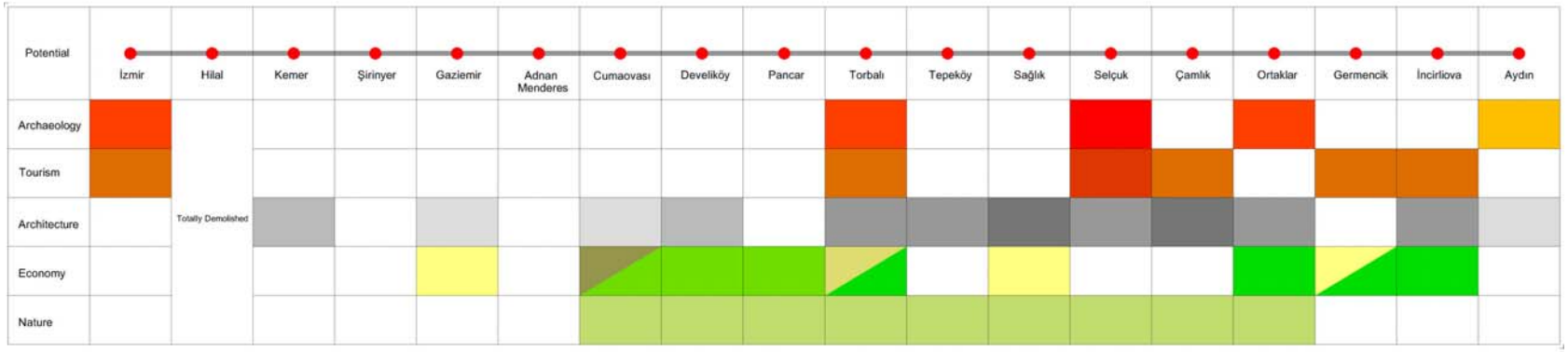


Table 3.4: The overall potentials, values and problems of İzmir – Aydın railway line

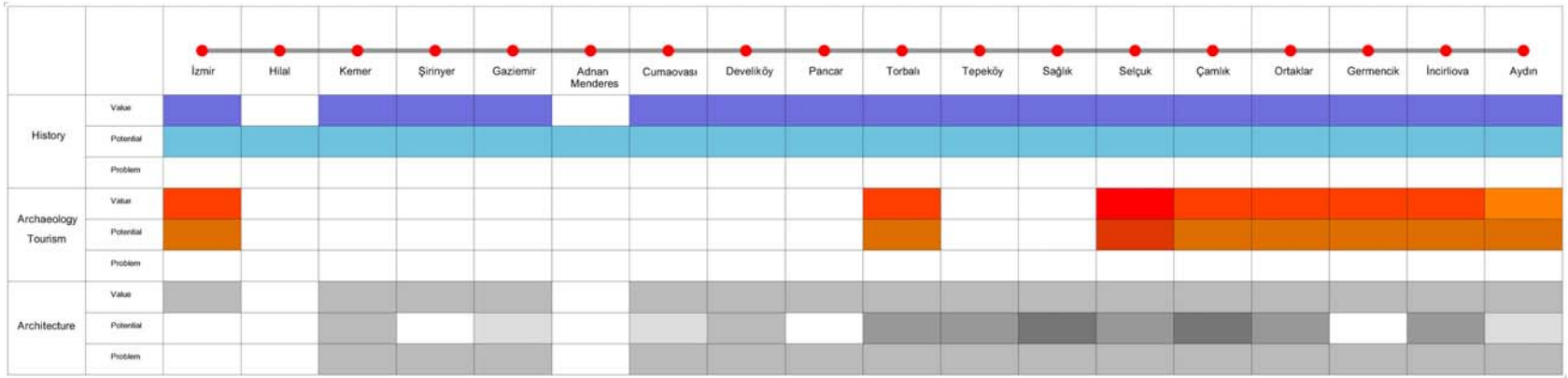


Table 3.5: The Potential of the İzmir – Aydın railway line in detail

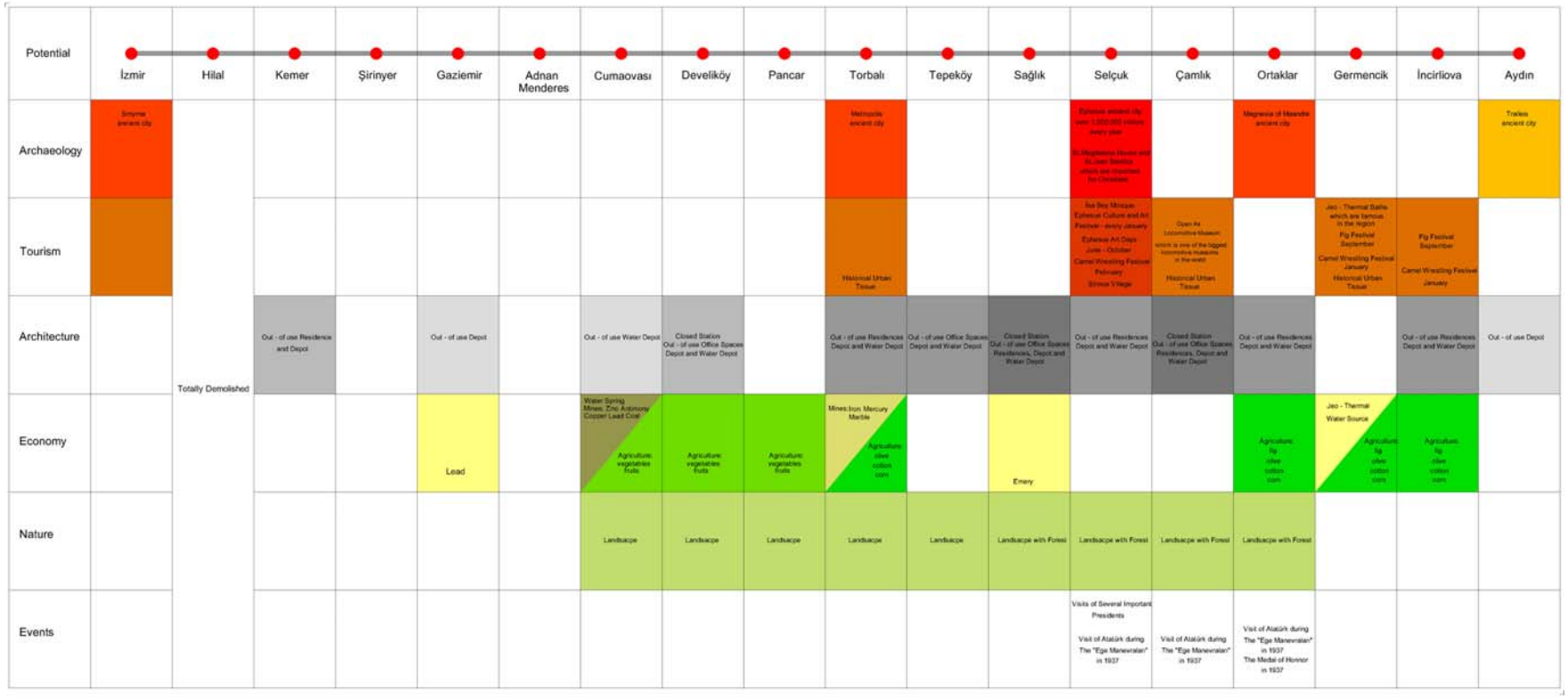


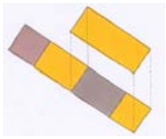
Table 3.6: The out of use spaces in the stations

Architecture	İzmir	Hilal	Kemer	Şirinyer	Gaziemir	Adnan Menderes	Cumaovası	Develiköy	Pancar	Torbalı	Tepeköy	Sağlık	Selçuk	Çamlık	Ortaklar	Germencik	İncirliova	Aydın
Main Station Offices		Totally Demolished	In Use	In Use	In Use	New Station International Airport	In Use	Out of Use	In Use	In Use	Out of Use	Out of Use	In Use	Out of Use	In Use	In Use	In Use	In Use
Residence			Out of Use	In Use	In Use		In Use	In Use	In Use	Out of Use	In Use	Out of Use	Out of Use	Out of Use	Out of Use	In Use	Out of Use	In Use
Depot			Out of Use	In Use	Out of Use		In Use	Out of Use	In Use	Out of Use	Out of Use	Out of Use	Out of Use	Out of Use	Out of Use	In Use	Out of Use	Out of Use
Water Depot							Out of Use	In Use	In Use	Out of Use	Out of Use	Out of Use	Out of Use	Out of Use	Out of Use	In Use	Out of Use	In Use

Table 3.7: The conditions of the buildings and the out of use spaces in the stations

Architecture	İzmir	Hilal	Kemer	Şirinyer	Gaziemir	Adnan Menderes	Cumaovası	Develiköy	Pancar	Torbalı	Tepeköy	Sağlık	Selçuk	Çamlık	Ortaklar	Germencik	İncirliova	Aydın
Main Station Offices		Totally Demolished	In Use	In Use	In Use	New Station International Airport	In Use	Out of Use	In Use	In Use	Out of Use	Out of Use	In Use	Out of Use	In Use	In Use	In Use	In Use
Residence			Out of Use	In Use	In Use		In Use	In Use	In Use	Out of Use	In Use	Out of Use	Out of Use	Out of Use	Out of Use	In Use	Out of Use	In Use
Depot			Out of Use	In Use	Out of Use		In Use	Out of Use	In Use	Out of Use	Out of Use	Out of Use	Out of Use	Out of Use	Out of Use	In Use	Out of Use	Out of Use
Water Depot							Out of Use	In Use	In Use	Out of Use	Out of Use	Out of Use	Out of Use	Out of Use	Out of Use	In Use	Out of Use	In Use

Table 3.8: The plan typology of main station buildings

	 **Type A**	 **Type B1**	 **Type B2**	 **Type B3**
 **one sided station**	Gaziemir, Sağlık	Şirinyer Develiköy Pancar Selçuk	Çamlık	
 **two sided station**	Torbalı	Kemer,	Ortaklar,	İncirliova

3.2.2. Alterations in Buildings

All of the major stations were subjected to alterations. The major alterations are related with the finishing materials. Especially wooden floors are altered with the mosaic tiles and the wall plasters and paints are renewed. The original floors are conserved in Torbalı, Gaziemir main station buildings and Selçuk station's residence.

The spatial alteration is the second common alteration type in the stations. Especially in the office spaces, addition of walls were observed to create new office spaces. But the most common type is to create a little ticket office in waiting room or departure office as in Gaziemir, Selçuk and Ortaklar stations. On the other hand, in Şirinyer station, the wall between the chief's office and the ticket office has partially demolished to get more light and air (fig.3.1, fig.3.2 and fig.3.3).

Fig.3.1: The new ticket office in the waiting room of Gaziemir Station

Fig. 3.2: The ticket office of Selçuk Station

Fig.3.3: The wall between the chief's office and ticket office in Şirinyer Station

There are two buildings that their functions were changed; these are depot building of Şirinyer station and the water depot of Selçuk station. Şirinyer station depot building was converted to residence, departure office and club of retired railway workers. The water depot was transformed partially into a café, however it is closed now.

Fig.3.4: The depot building of Şirinyer Station

There are three renewals of main station building in the İzmir – Aydın railway line stations. These are Cumaovası, Tepeköy and Aydın main station buildings which were constructed after demolishing the old station buildings. In Çamlık, the new station building was constructed due to changes in the route of the railway line (fig.3.5, fig.3.6, fig.3.7 and fig.3.8)

Fig.3.5: Cumaovası main station building

Fig.3.6: Tepeköy main station building

Fig.3.7: Aydın main station building

Fig.3.8: Çamlık main station building

The additions in the stations are mostly related with new WC and cafes (kahvehane). All the stations, except Cumaovası, and Çamlık have new WC building and kahvehane building. Moreover, in Şirinyer station, a wedding hall was constructed due to easy accessibility feature of the station.

3.3. General Assessment; Problems, Potentials and Values

When the above mentioned values presented on a schematic drawing representing İzmir – Aydın railway line, it can be seen that in 1856, the nature, archeology and economy were very important. As mentioned in second chapter, it was continued during the late Ottoman period while these features are still peculiar today (Table 3.1).

In table 3.2 and 3.3, the potentials gathered from the features of İzmir – Aydın railway line are shown. It can be considered that, between Cumaovası and Aydın stations there is high concentration of potential in terms of nature, archeology and economy. This section of the railway line is subjected to less intervention when compared to the section between İzmir and Cumaovası. The enlargement of the İzmir city centre in terms of both population and area, affected the railway line and the region close to the centre. However, the features of the section between Cumaovası and Aydın have been developed in parallel to the İzmir city centre (Table 3.4).

When İzmir – Aydın railway line is examined according to four criteria mentioned by Coulls, it can be see that İzmir – Aydın railway line features are in line with these four criteria. Being the first railway line in Anatolia and one of the early examples in the world, from planning to application, İzmir – Aydın railway line has creative features. The relation of the line and the landscape, the architectural features which were designed according to the region show the creative side of the İzmir – Aydın railway line. This creative work, which is the railway as a whole, influenced the both region and Ottoman Empire industrialization as mentioned in first and second chapter. Moreover, the İzmir – Aydın railway line effected not only the region but also the Ottoman Empire socially and economically as it can be observed even

today. At last, İzmir – Aydın railway line is the first example in Turkey and it is the unique example in the world that there is no other railway line which is integrated from international policy to world economy.

The problems can be defined as general and architectural problems. The general problems are related with the awareness of the potentials while the architectural problems have connection with it.

The relations between general features of the İzmir – Aydın railway line and the railway itself are obscure in contemporary situation. Although İzmir - Aydın railway line is still working effectively in the region, it has not a role in the development in the region as in its history.

The main reason of this situation is directly related with the weakened position of the railway in the economy and transportation policies of the state. This position caused the break between the railway and the context which surrounds and unites the railway.

The reflection of this situation is able to be observed properly in İzmir – Aydın railway line. The railway has minimum effect in the transportation sector of the region. Moreover, the tourism sector has no direct relationship with the railway although the line had started the “tourism” in the region. The lack of vision prevents to create feasible alternatives in the tourism activities.

Another reflection is the decreased importance of the railway and railway stations in the city structure and public life although the centers were developed around the station complexes. However, there is not the totally break up between the stations and the public life; the most important proof is the “kahvehane” spaces situated in the station complexes. The stations still have the attractiveness coming from the early times.

Architectural problems can be grouped under two headings; first one is the condition of the buildings and the second one is the out of use spaces and the stations. As mentioned in the third chapter, the conditions of the buildings are not in good state due to poor maintenance. Moreover, the interventions which have been done by TCDD and temporary solutions to the both structural and material problems give damages to the buildings and the station complexes although the majority of the stations have been

designated. The proper restoration projects need to be prepared immediately for the sake of the conservation of the buildings.

The other heading related with the architectural problems is the out of use spaces and stations since the decreased number of passengers and the changing in the transportation. To keep the stations in good condition, the potential that station buildings posses need to be used with suitable functions for the station complexes.

As it can be considered that the solutions of the all problems related with İzmir – Aydın railway line are connected to each other. It is necessary to consider the İzmir – Aydın railway line as a whole with all the features mentioned in this work to obtain satisfactory solution in conservation field. In fact, the nature of the railway requires this kind of approach for the conservation of railway heritage.

As conclusion the values, problems and potentials can be grouped under the headings below:

The values:

- İzmir – Aydın railway line which is the first railway line in the Turkey with its architecture, technological aspects and heritage, unused relations with the features of the region.
- Historical background of railway united with the region history
- The geography of the region which has the possibilities to evaluate with several occasions such as tourism, sportive activities.
- The economy which is ready to create organizations with the İzmir - Aydın railway line
- The social life integrated with the İzmir – Aydın railway line
- The cultural and touristic richness which are discovered with the railway.

The potentials:

- The İzmir – Aydın railway and its strategic but out of considered position in the region.

- The economy and tourism potential which have potentials to integrate with the izmir – Aydın railway.
- The unused railway stations, buildings and spaces which have potentials with new functions and organizations.
- The technological heritage that railway posses

The problems:

- Weakened importance of the İzmir – Aydın railway
- The lack of maintenance, equipment and personnel due to economical problems of TCDD and inadequate transportation strategy of the state
- The lack of interest in tourism and economy sector of the region.
- The bad condition of the railway stations and railway equipment.

CHAPTER 4:

A PROPOSAL FOR CONSERVATION OF İZMİR – AYDIN RAILWAY LINE

The railway is one of the most important innovations which have affected the world history deeply as mentioned in chapter one while expressing the railway history. From technical development of the industry to the social life of the societies there are many effects of the railway. The fast transportation of goods and people could be realized with the railway which is one of the pioneer figures of the industrial revolution.

After its birth, railway was used not only for transportation purpose but also became a tool for exploitation of the undeveloped countries by the imperial powers. Maybe the most significant example is the India, which was the colony of the Britain until the mid of 20th century. The railway was used to exploit the natural source of India to cover the developing industry's need of raw material and goods.

The Ottoman Empire has met with railway twenty five years after its innovation. However, the railway entered to the imperial land for the purpose of exploitation of Anatolia by major European countries which are Britain, France and Germany. The concessions given to these countries caused political end economical competition between each other to gain better political position and influence on the Ottoman Empire.

İzmir – Aydın railway line is the first railway in the Anatolia constructed by a British company with the concession given by the Ottoman Empire. It was constructed between 1856 and 1866. The main reason was to use the natural sources of fertile Aegean region and transport goods and raw materials to England by the İzmir port. The railway was used to collect and carry the goods.

However, beyond the economical purposes, İzmir – Aydın railway created different consequences both in the region and in the Ottoman Empire. After the construction of railway line the social life and city structure has changed in the region with the whole commercial structure. Moreover,

the archeological excavations started with the railway while one of the seven wonders of the ancient world was discovered in Ephesus by the railway engineer J.T. Woods.

Since mid 19th century, İzmir – Aydın railway line has important place in both economical and cultural development of the region. However, the conservation of İzmir – Aydın railway line was neglected during this time due to several reasons. First of all the conservation of railway heritage is a new subject which is in developing process not only in Turkey but also in the world. As a second, the attempts on conservation of railway heritage are very few in parallel to the limited works on railway use. Moreover, the complex structure of the railway needs interdisciplinary teams to organize and realize the suitable conservation projects.

The need to consider the İzmir – Aydın railway line as a whole for the conservation of railway heritage requires a proper conservation approach and a comprehensive organization. Since the line is still active, this conservation approach has to be articulated with the contemporary situation.

The railway is integrated with the social environment developed since its construction as mentioned in the first chapter. This integration has specifically been exemplified with the İzmir – Aydın railway line. From economy to history, the railway was and still is the important figure of the region.

The conservation approach of the railway heritage has to consider and include the social aspects as well as the technical aspects as in the definition of the railway. The conservation proposal of the İzmir – Aydın railway line will be formed in the framework that has been drawn in third chapter considering the values, problems and potentials of the region.

Since the conservation of railway heritage is a very recent topic, the general conservation definitions and regulations have developed in the last decade of the 20th century as mentioned in the first chapter. Moreover, the lack of these definitions and regulations in Turkey was mentioned also in the first chapter.

İzmir – Aydın railway line shows that the designation of the railway station buildings as singular entity is not enough for the conservation of the railway line as a whole. When the values mentioned in the previous chapter are considered, the conservation of the İzmir – Aydın railway line requires decisions and practices in different scales.

4.1. The Conservation Principles of İzmir – Aydın Railway Line

There are several layers of İzmir – Aydın railway line that need to be considered as important as the physical environment as mentioned in the second and third chapter. That's why the proper conservation project should be developed considering all layers and based on information gathered from the railway with the help of interdisciplinary works. This thesis is tried to cover one of the possible conservation project in a general conservation approach that make possible to develop the other potential conservation related projects. This thesis propose a generator project to start the complementary works and projects on conservation of İzmir – Aydın railway line as which can guide other railway line conservation projects.

The conservation principles of İzmir – Aydın railway line are grouped under the headings below:

- The railway heritage is a complex phenomenon that needs to be analyzed, evaluated by many specialists including historians, geographers, economists, socialists, architects, conservators in cooperating with each other.
- The planning process need to be started with the production of a master plan prepared by the multidisciplinary teams as mentioned in the previous heading. This plan should be prepared with a co-operation of State Planning Office's (Devlet Planlama Teşkilatı – DPT) then a Development Plan and Strategic Plan should be prepared accordingly by the local Municipilaties[14].

14 According to law no: 5227 new arrangements an duties has been given to the local municipalities. One of them is the preparation of Strategic Plans coordinated with Master Plan and Urban Conservation Plans. For further

- The İzmir – Aydın railway line as a whole has to be registered as “Historic Railway Heritage Site” according to law no: 5226 (The Law About Changes on Conservation of Cultural and Natural Heritage Law – Kültür ve Tabiat Varlıklarını Koruma Kanunu Hakkında Değişiklik Yapılması Hakkında Kanun). The width of the line is to be decided by the multidisciplinary team. Moreover, Intersection Points which are defined in Law no: 5226 article 12 as the points important in terms of cultural and natural heritage situated out of administration limits will be defined and designated with the Historic Railway Heritage Site.(Appendix B)
- İzmir – Aydın railway line considering the railway stations as complexes, need to be designated.
- All technological equipment placed at the İzmir – Aydın railway line, especially in the maintenance buildings in Çamlık station, which presents the former technological system need to be designated.
- All of mobile and immobile objects related with the İzmir – Aydın railway line exemplifying the former technology such as clocks, steelyards etc…need to be designated one by one.
- The close environment of the İzmir – Aydın railway line which form the context of the railway line need to be designated as mentioned in the first three headings.
- Although İzmir – Aydın railway line has weakened position compared with the beginning of the century, it has still important transportation capacity and potential since its construction. To regain its importance is related with development projects related with this transportation potential. Moreover, the main transportation function of İzmir – Aydın railway line which is still

information please see GÜÇHAN, Neriman Şahin and KURUL, Esra.(2005) ،2003-2005 Döneminde Gerçekleştirilen Yeni Yasal Düzenlemeler ve “Koruma Alanına” Etkileri; Bir Ön Değerlendirme، In, “Korumada 50 Yıl”, Mimarsinan Güzel Sanatlar Fakültesi Mimarlık Bölümü, Kasım 2005, imprinted,İstanbul.

active has to be continued within the conservation approach and projects to be developed.

- These development projects of the İzmir – Aydın railway line is to be integrated with the whole elements of the railway heritage which presented in the previous chapters.
- The contemporary functions of the buildings related with the railway have to continue.
- The re-functioning process has to be integrated with the contemporary functions of the stations.
- The new functions need to be arranged to develop the stations as cultural centers of the settlements where stations are placed.
- The designation of the stations needs to be complete immediately.
- The objects and furniture related with railway and railway stations need to be designated.

4.2. Conservation Proposal of İzmir – Aydın Railway Line

Aim

The aim of this proposal is to develop a conservation project for railway heritage of İzmir – Aydın railway line based on to continue its main transportation function adding to it the cultural tourism. This proposal aims to use the transportation, architectural and economical potentials with the values mentioned in the third chapter for the sake of conservation and continuity of working of İzmir – Aydın railway line.

Owners and Partners

- TCDD which is the owner of all equipment, movable and immovable objects
- The municipalities of the settlements where railway line passes
- Tourism agencies which are working in the region

Target Population

- The local and foreigner tourists
- Scientists and students
- Region population

Benefits

- The proper conservation of railway heritage that İzmir – Aydın railway line presents
- To create an economical sources needed for the use of potentials of İzmir – Aydın railway line and for the TCDD
- Opening of new investment area for the region population
- Forming of alternative in terms of tourism sector

Proposal Detail

The main issue of the proposal is to conservation of İzmir – Aydın railway line with the cultural tourism oriented organizations. Another important issue is to continue the contemporary transportation activity.

Besides the existing train trips, the proposal suggests a hotel – train designed to serve the special touristic trips in the region. These are thematic trips formed according to the features and values mentioned both in second and third chapters. These themes are;

- Archeology
- Architecture
- Geography – Nature
- Tourism – Cultural Heritage
- Railway History and railway technology

The content of the themes is shown in the table 4.1. In this table, the junctions of the values and themes shows the features presented in the trips.

The duration of the trips is variable. There are four trip time - tables for each themes; daily trips, week-end or two days trips, three to four days trips

and finally trips which lasting a week. The focus of the trips will be determined according to the duration of the trip and the target population.

The most important point is that these trips have to be added to the regular train trips between İzmir – Aydın – Denizli. The touristic trips proposed by this project aims to provide the continuation of railway life in the İzmir – Aydın railway line while by this trips İzmir – Aydın railway line is able to regain its importance.

Table 4.1: Combination of themes and values

Values / **Themes**	Archeology	Architecture	Geography - nature	Local and Social Features	Railway history and technology
Archeology	**X**	**X**		**X**	
Architecture	**X**	**X**			**X**
Geography - nature	**X**		**X**	**X**	
Local and Social Features	**X**	**X**	**X**	**X**	**X**
Railway history and technology	**X**	**X**	**X**	**X**	**X**

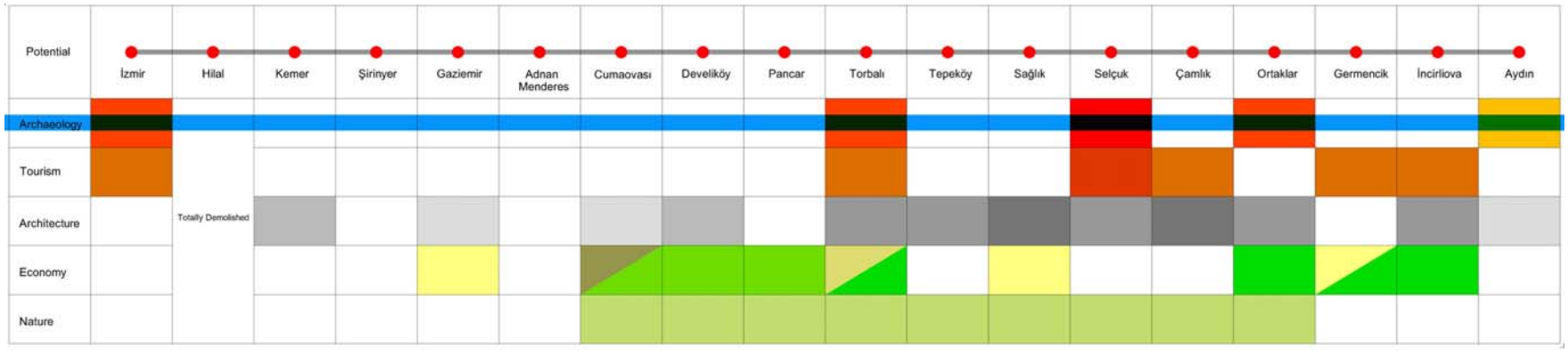


Fig.4.1: The themes and the juxtaposition of the potentials; Archeology

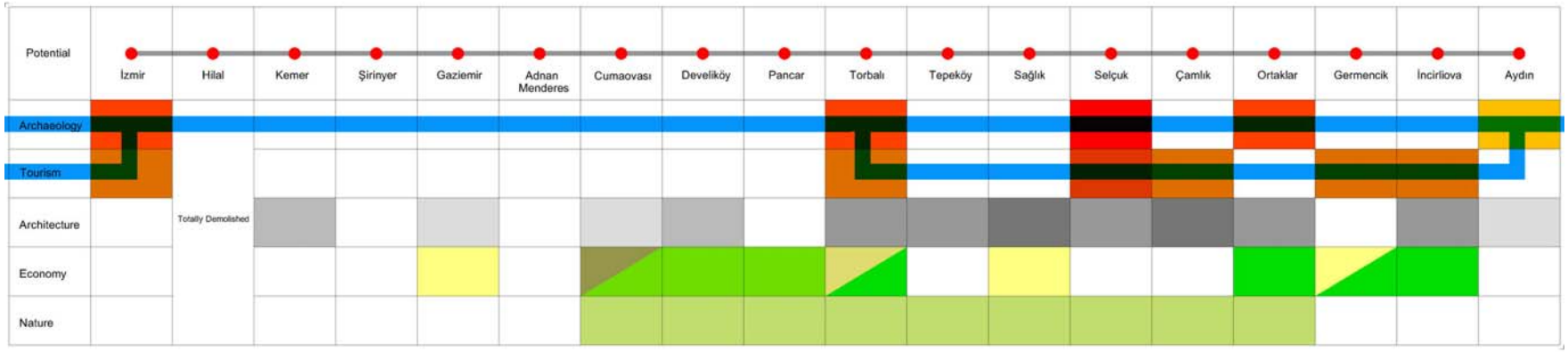


Fig.4.2: The themes and the juxtaposition of the potentials; Archeology and Tourism - Cultural Heritage

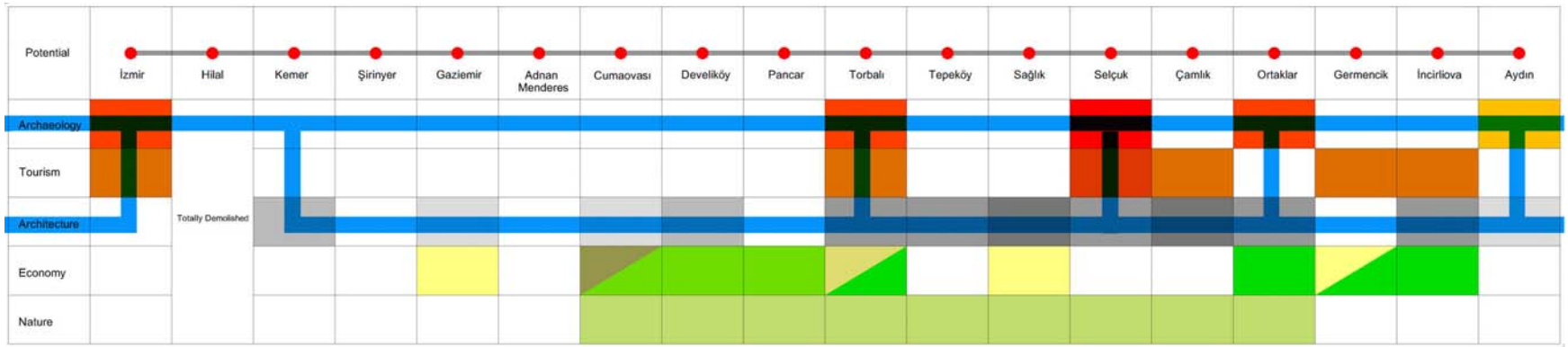


Fig.4.3: The themes and the juxtaposition of the potentials; Archeology and Architecture

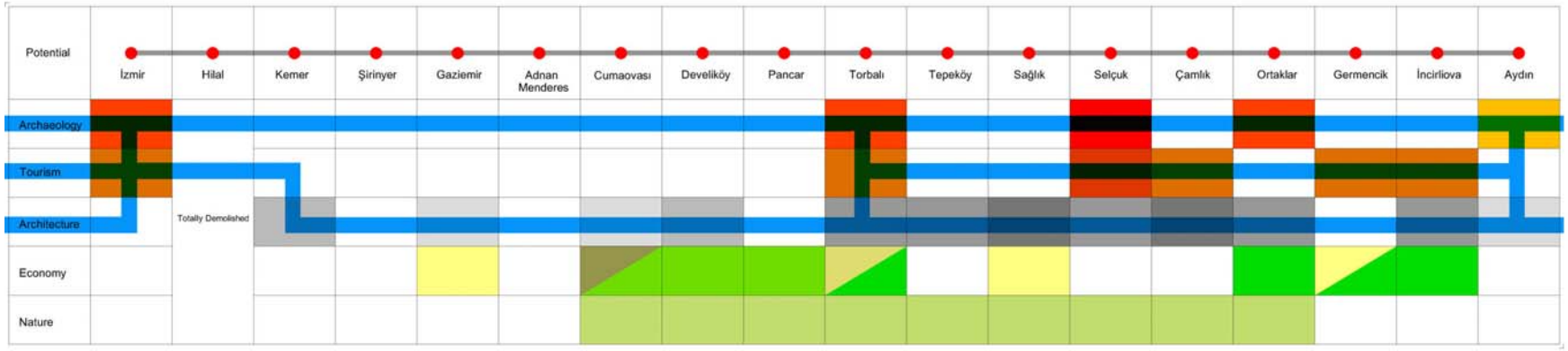


Fig.4.4: The themes and the juxtaposition of the potentials; Archeology, Architecture and Tourism - Cultural Heritage

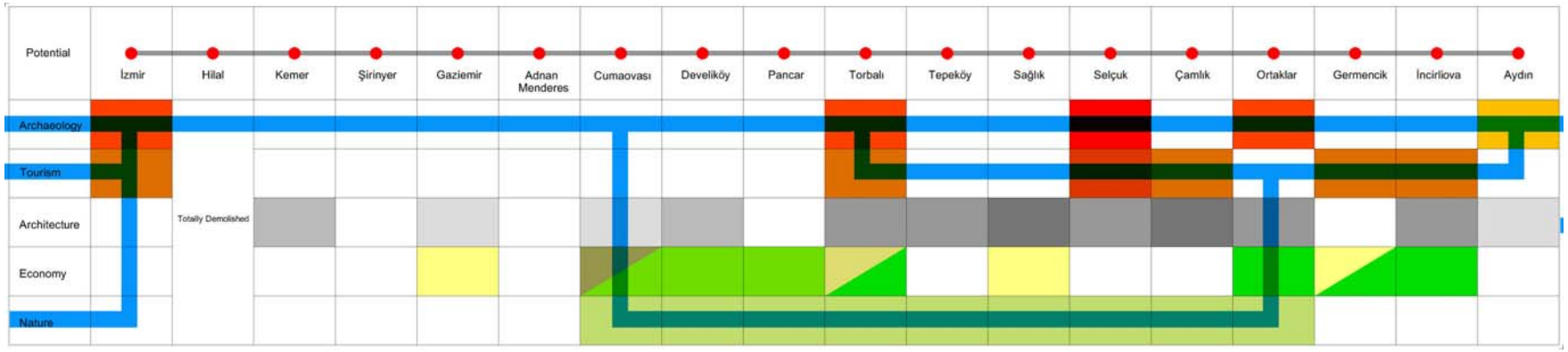


Fig.4.5: The themes and the juxtaposition of the potentials; Archeology, Nature and Tourism - Cultural Heritage

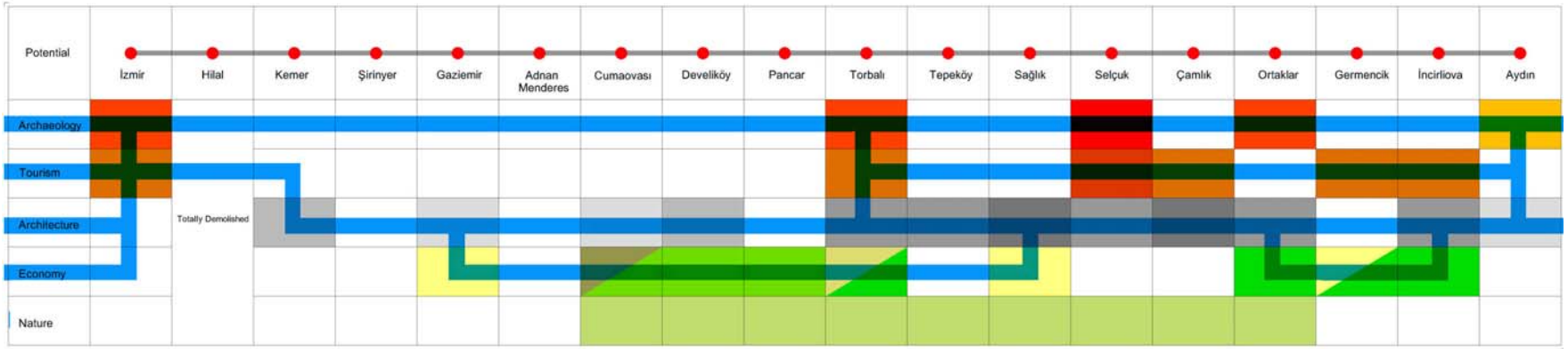


Fig.4.6: The themes and the juxtaposition of the potentials; Archeology, Architecture,Economy and Tourism - Cultural Heritage

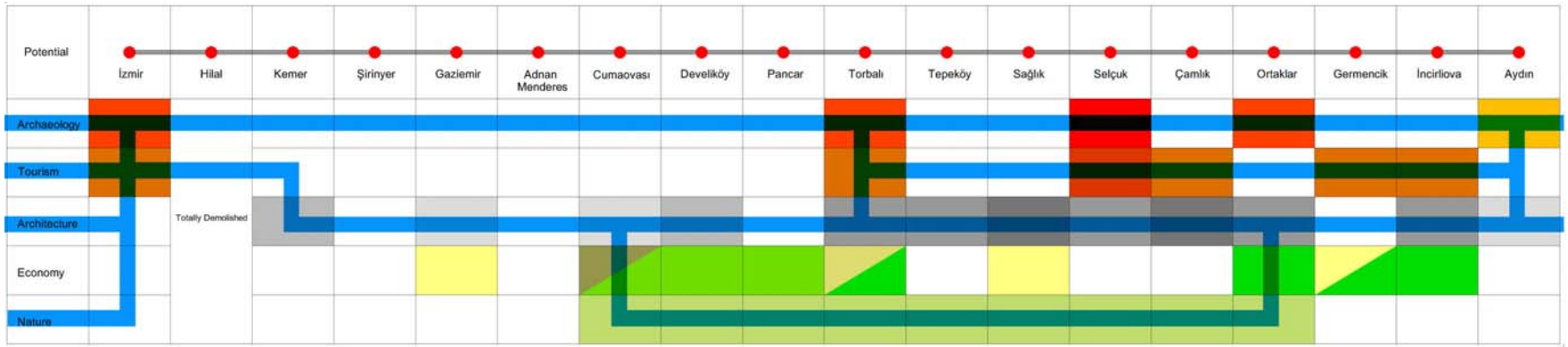


Fig.4.7: The themes and the juxtaposition of the potentials; Archeology, Nature and Tourism - Cultural Heritage

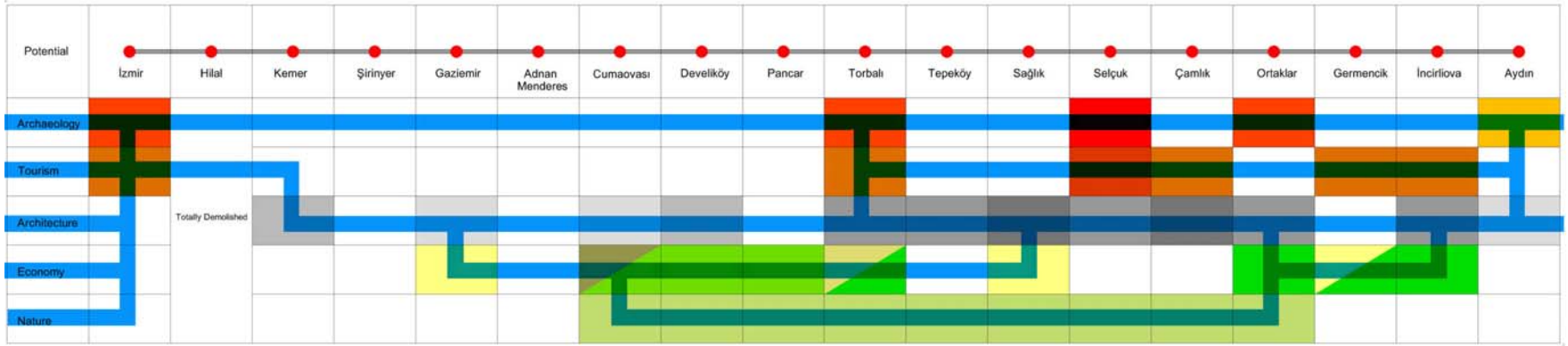


Fig.4.8: The themes and the juxtaposition of the potentials; all layers

Stations and Buildings

Considering above mentioned general conservation principles, architectural potentials of the unused stations and spaces will be evaluated by using these buildings and spaces for services during the trips. These are; administration offices, information offices, restaurants, cafés, light accommodation places for trekkers and athletes dealing with the nature sports. The conservation principles related with the stations and buildings are below:

- The contemporary functions of the buildings related with the railway have to continue.
- The re-functioning process has to be integrated with the contemporary functions of the stations.
- The new functions need to be arranged to develop the stations as cultural centers of the settlements where stations are placed.
- The designation of the stations needs to be complete immediately.
- The objects and furniture related with railway and railway stations need to be designated.

Maintenance of the Buildings

Overall conditions of the buildings of the stations are poor as mentioned in the second chapter. The majority of the main station buildings and residences need immediate interventions while the depots and water depots are comparatively in better.

The interventions can be grouped according to conditions of buildings under the headings below:

- Type A: Structural and material intervention for structural system, roof, finishing and fenestration
- Type B: Material intervention for roof finishing and fenestration
- Type C: Material interventions for finishing and fenestrations
- Type D: Material and technical interventions for equipments which are placed in the buildings.

The buildings and the interventions group is shown in the table 4.2. According to this table, all the main station buildings except Kemer and İncirliova main station buildings need intervention type A. The two residence buildings need intervention Type B. The depots need intervention type C while Şirinyer depot building requires intervention type A. Meanwhile all the water depots need intervention type C. One exception is Çamlık station maintenance buildings which have technical equipments which need special intervention.

Table 4.2 : Interventions and station buildings

Stations	Main Station Building	Residence	Depot	Water Depot	Maintenance Building
Hilal	The station building was demolished during the metro construction				
Kemer	C		C	X	X
Şirinyer	A		A	X	X
Gaziemir	A		X	X	X
Adnan Menderes	The station was constructed in 1980's				
Cumaovası		B	X	C	X
Develiköy					X
Pancar					X
Torbalı	A		C	C	X
Tepeköy	Demolished and new building constructed in 1950's	B	X	X	X
Sağlık					X
Selçuk	A		C	C	X
Çamlık	A		C	C	C-D
Ortaklar	A		C	C	X
Germencik	The station was constructed in 1950's				
İncirliova	C		C	C	X
Aydın	Demolished and new building constructed in 1950's		C	Demolished	X

X: no intervention necessary

Refunctioning

The new functions of the stations have to be integrated with the railway as mentioned in the conservation principles. The station complexes that are situated at the center of the cities have potential to give new functions for unused spaces.

The new functions need to support to the current railway functions and regular train trips as well as the citizens of the settlements where the station complexes are placed. Therefore the stations need to be the cultural centers beside of the transportation and connection point. In table 4.3 these new functions are shown according to the potentials explained in the third chapter and the principles of the proposal.

Table 4.3: The new functions proposed to the stations

Station	Contemporary situation	New function integrated with the contemporary situation
Kemer	Active	Information and Administration Offices
Şirinyer	Active	
Gaziemir	Active	
Cumaovası	Active	Organization Offices
Develiköy	Closed	Restaurant and Cafe
Pancar	Active	
Torbalı	Active	Information – Light Accomodation
Tepeköy	Active	
Sağlık	Closed	Information – Light Accomodation
Selçuk	Active	Centre of the Administration - Light Accomodation
Çamlık	Closed	Restuarant and Café Museum offices
Ortaklar	Active	Organization Offices
Germencik	Active	
İncirliova	Active	Light Accomodation – Culture Centre
Aydın	Active	Information and Administration Ofiices

According to table 4.3, three Administration offices which are placed in Kemer, Selçuk and Aydın are planned. Selçuk is defined as the administration center. Organization offices are placed Ortaklar and Cumaovası in addition to the administration offices since these two stations are planned to be the intersection point for the trekkers and the tourists who are planning to reach the cultural organization held in Ortaklar, İncirliova and Germencik. Çamlık with its locomotive museum is planned to serve as the restaurant and café while Develiköy also has same function due to its location between the centers. The light accommodation which means to cover the minimum need for travelers who want to accommodate is given to the stations between Torbalı and Aydın where cultural and touristic potentials has became dense as mentioned in the third chapter.

As it can be seen that the new functions are defined as the service functions for the touristic trips since the architectural potentials of the station buildings are limited. Moreover, during these trips, it is planned that the train which is designed specifically for this purpose should cover the needs of the tourists or the passengers as a hotel train.

Organization

TCDD being the owner of the railway line will be at the centre of the organization. It will be responsible in keeping and sustaining the condition of the railway line properly. It will be responsible to find the second capital to start the project. Then the money during the project will be collected in a pool to spend for conservation of İzmir – Aydın railway line. The municipalities will be working in cooperation with TCDD in management of the project. The tourism agencies will be responsible for the organization of the trips.

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APPENDIX A

SURVEY SHEETS PREPARED FOR FIELD SURVEY

These are the survey sheets which were used during the field survey between spring and fall of 2004. The first survey form, titled E, aims at examining the exterior parts, structural system, construction materials, structural deformations, material decay, alterations and architectural elements The second survey form, titled I, aims at examining the interior spaces of the buildings. It is aimed to investigate the finishing material of the spaces, alterations, conditions and functions of each space in the buildings. The aim of the third survey sheet which is a questionnaire aims at collecting information from the officers of TCDD. In each station, the interview was held with the chief of the station or the officer who has been working for a long time at the station.

MIDDLE EAST TECHNICAL UNIVERSITY FACULTY OF ARCHITECTURE		E
GRADUATE PROGRAM OF RESTORATION - MASTER THESIS SURVEY FORMS		
CITY:	STATION:	
BUILDING:		

STRUCTURAL SYSTEM & CONSTRUCTION MATERIAL

	basement	ground level	1st floor	2nd floor	3rd Floor	roof
TIMBER SKELETON						
MASONRY						
FINISHING						

STRUCTURAL DEFORMATIONS

	basement	ground level	1st floor	2nd floor	3rd Floor	roof
DEFORMATIONS						
CRACKS						

MATERIAL DECAY

	basement	ground level	1st floor	2nd floor	3rd Floor	roof
TIMBER						
STONE						
PLASTER						

CHANGES

	basement	ground level	1st floor	2nd floor	3rd Floor	roof
ADDITION						
REMOVAL						
ALTERATION						

ARCHITECTURAL ELEMENTS

	material	condition	addition	removal	alteration	notes
DOORS						
WINDOWS						
PROJECTIONS						
CHIMNEYS						
GUTTERS						

ABBREVATIONS

MATERIAL			DETERIORATION		
CS: cut stone	RS: Ruble stone	WL: wood lath	D: Discoloration	RD: Rising Damp	
RC: rough cut stone	W: wood	B: brick	DS: Disintegration	F: Flaking	
LP: Lime Plaster	P: Paint		ML: Material Loss		
C: Cement	M: Metal		RP: Rain Penetration		

NOTES

MIDDLE EAST TECHNICAL UNIVERSITY FACULTY OF ARCHITECTURE		I
GRADUATE PROGRAM OF RESTORATION - MASTER THESIS SURVEY FORMS		
CITY:	STATION:	
BUILDING:		

Floor No:		floor	ceiling	wall	door	window		function
Room 1	Material							
	Alteration							
	Condition							
	Type							
Room 2	Material							
	Alteration							
	Condition							
	Type							
Room 3	Material							
	Alteration							
	Condition							
	Type							
Room 4	Material							
	Alteration							
	Condition							
	Type							
Room 5	Material							
	Alteration							
	Condition							
	Type							
Room 6	Material							
	Alteration							
	Condition							
	Type							
Room 7	Material							
	Alteration							
	Condition							
	Type							
Room 8	Material							
	Alteration							
	Condition							
	Type							
Room 9	Material							
	Alteration							
	Condition							
	Type							
Room 10	Material							
	Alteration							
	Condition							
	Type							
ABBREVATIONS								

MATERIAL			DETERIORATION		
CS: cut stone	RS: Ruble stone	WL: wood lath	D: Discoloration	RD: Rising Damp	
RC: rough cut stone	W: wood	B: brick	DS: Disintegration	F: Flaking	
LP: Lime Plaster	P: Paint		ML: Material Loss		
C: Cement	M: Metal		RP: Rain Penetration		

MIDDLE EAST TECHNICAL UNIVERSITY FACULTY OF ARCHITECTURE		S
GRADUATE PROGRAM OF RESTORATION - MASTER THESIS SURVEY FORMS		
CITY:	STATION:	
BUILDING:		

1. İsim Soyad:

.....

2. Göreviniz:

.....

3. Kaç Yıldır TCDD'de çalışıyorsunuz?:

.....

4. Kaç yıldır bu istasyonda çalışıyorsunuz?:

.....

5. Binada şahit olduğunuz değişiklikler nelerdir?:

.....

6. Binadaki yapısal sorunlar ile ilgili gözlemler nelerdir?

.....

7. Son 10 senede yapılan resmi onarımlar nelerdir?:

.....

8. Binada karşılaştığınız kullanım zorlukları nelerdir?:

.....

9. TCDD Genel Müdürlüğünden talep ettiğiniz onarımlar var mı?

.....

10. Bina ile ilgili yolculardan gelen şikayetler nelerdir?

.....

11. Binanın tarihi ile ilgili bilginiz var mı?

.....

12. Binada yaşanan özel bir olay, kaza, ziyaret var mı?

.....

Notlar:

APPENDIX B

THE CONTENT OF LAW NO:5226

The İzmir – Aydın railway line as a whole has to be registered as “Historic Railway Heritage Site” according to law no: 5226 (The Law About Changes on Conservation of Cultural and Natural Heritage Law – Kültür ve Tabiat Varlıklarını Koruma Kanunu Hakkında Değişiklik Yapılması Hakkında Kanun). The width of the line is to be decided by the multidisciplinary team. Moreover, Intersection Points which are defined in Law no: 5226 article 12 as the points important in terms of cultural and natural heritage situated out of administration limits will be defined and designated with the Historic Railway Heritage Site

KÜLTÜR VE TABİAT VARLIKLARINI KORUMA KANUNU İLE ÇEŞİTLİ KANUNLARDA DEĞİŞİKLİK YAPILMASI HAKKINDA KANUN

Kanun no : 5226

Kabul Tarihi : 14.7.2004

MADDE 1.- 21.7.1983 tarihli ve 2863 sayılı Kültür ve Tabiat Varlıklarını Koruma Kanununun 3 üncü maddesinin; (a) bendinin (1) numaralı alt bendi aşağıdaki şekilde değiştirilmiş, (3) numaralı alt bendine "kent kalıntıları" ibaresinden sonra gelmek üzere "kültür varlıklarının yoğun olarak bulunduğu sosyal yaşama konu olmuş veya" ibareleri ile aynı bende (7), (8), (9), (10), (11) ve (12) numaralı alt bentler eklenmiş, (b) bendinin (3) numaralı alt bendi aşağıdaki şekilde değiştirilmiştir.

(1) "Kültür varlıkları"; tarih öncesi ve tarihi devirlere ait bilim, kültür, din ve güzel sanatlarla ilgili bulunan veya tarih öncesi ya da tarihi devirlerde sosyal yaşama konu olmuş bilimsel ve kültürel açıdan özgün değer taşıyan yer üstünde, yer altında veya su altındaki bütün taşınır ve taşınmaz varlıklardır.

(7) "Ören yeri"; tarih öncesinden günümüze kadar gelen çeşitli uygarlıkların ürünü olup, topoğrafik olarak tanımlanabilecek derecede yeterince belirgin ve mütecanis özelliklere sahip, aynı zamanda tarihsel, arkeolojik, sanatsal, bilimsel, sosyal veya teknik bakımlardan dikkate değer, kısmen inşa edilmiş, insan emeği kültür varlıkları ile tabiat varlıklarının birleştiği alanlardır.

(8) "Koruma amaçlı imar plânı"; bu Kanun uyarınca belirlenen sit alanlarında, alanın etkileşim-geçiş sahasını da göz önünde bulundurarak, kültür ve tabiat varlıklarının sürdürülebilirlik ilkesi doğrultusunda korunması amacıyla arkeolojik, tarihi, doğal, mimarî, demografik, kültürel, sosyo-ekonomik, mülkiyet ve yapılaşma verilerini içeren alan araştırmasına dayalı olarak; hali hazır haritalar üzerine, koruma alanı içinde yaşayan hane halkları ve faaliyet gösteren iş yerlerinin sosyal ve ekonomik yapılarını iyileştiren, istihdam ve katma değer yaratan stratejileri, koruma esasları ve kullanma şartları ile yapılaşma sınırlamalarını, sağlıklaştırma, yenileme alan ve projelerini, uygulama etap ve programlarını, açık alan sistemini, yaya dolaşımı ve taşıt ulaşımını, alt yapı tesislerinin tasarım esasları, yoğunluklar ve parsel tasarımlarını, yerel sahiplilik, uygulamanın finansmanı ilkeleri uyarınca katılımcı alan yönetimi modellerini de içerecek şekilde hazırlanan, hedefler, araçlar, stratejiler ile pl â nlama kararları, tutumları, pl â n notları ve açıklama raporu ile bir bütün olan nazım ve uygulama imar pl â nlarının gerektirdiği ölçekteki pl â nlardır.

(9) "Çevre düzenleme projesi"; ören yerlerinin arkeolojik potansiyelini koruyacak şekilde, denetimli olarak ziyarete açmak, tanıtımını sağlamak, mevcut kullanım ve dolaşımdan kaynaklanan sorunlarını çözmek, alanın ihtiyaçlarını çağdaş, teknolojik gelişmelerin gerektirdiği donatılarla gidermek amacıyla her ören yerinin kendi özellikleri göz önüne alınarak hazırlanacak 1/500, 1/200 ve 1/100 ölçekli düzenleme projeleridir.

(10) "Yönetim alanı"; sit alanları, ören yerleri ve etkileşim sahalarının doğal bütünlüğü içerisinde etkin bir şekilde korunması, yaşatılması, değerlendirilmesi, belli bir vizyon ve tema etrafında geliştirilmesi, toplumun kültürel ve eğitsel ihtiyaçlarıyla buluşturulması amacıyla, pl â nlama ve koruma konusunda yetkili merkezî ve yerel idareler ile sivil toplum kuruluşları arasında eşgüdümü sağlamak için oluşturulan ve sınırları ilgili idarelerin görüşleri alınarak Bakanlıkça belirlenen

yerlerdir.

(11) "Yönetim pl â nı"; yönetim alanının korunmasını, yaşatılmasını, değerlendirilmesini sağlamak amacıyla, işletme projesini, kazı pl â nı ve çevre düzenleme projesi veya koruma amaçlı imar pl â nını dikkate alarak oluşturulan koruma ve gelişim projesinin, yıllık ve beş yıllık uygulama etaplarını ve bütçesini de gösteren, her beş yılda bir gözden geçirilen pl â nlardır.

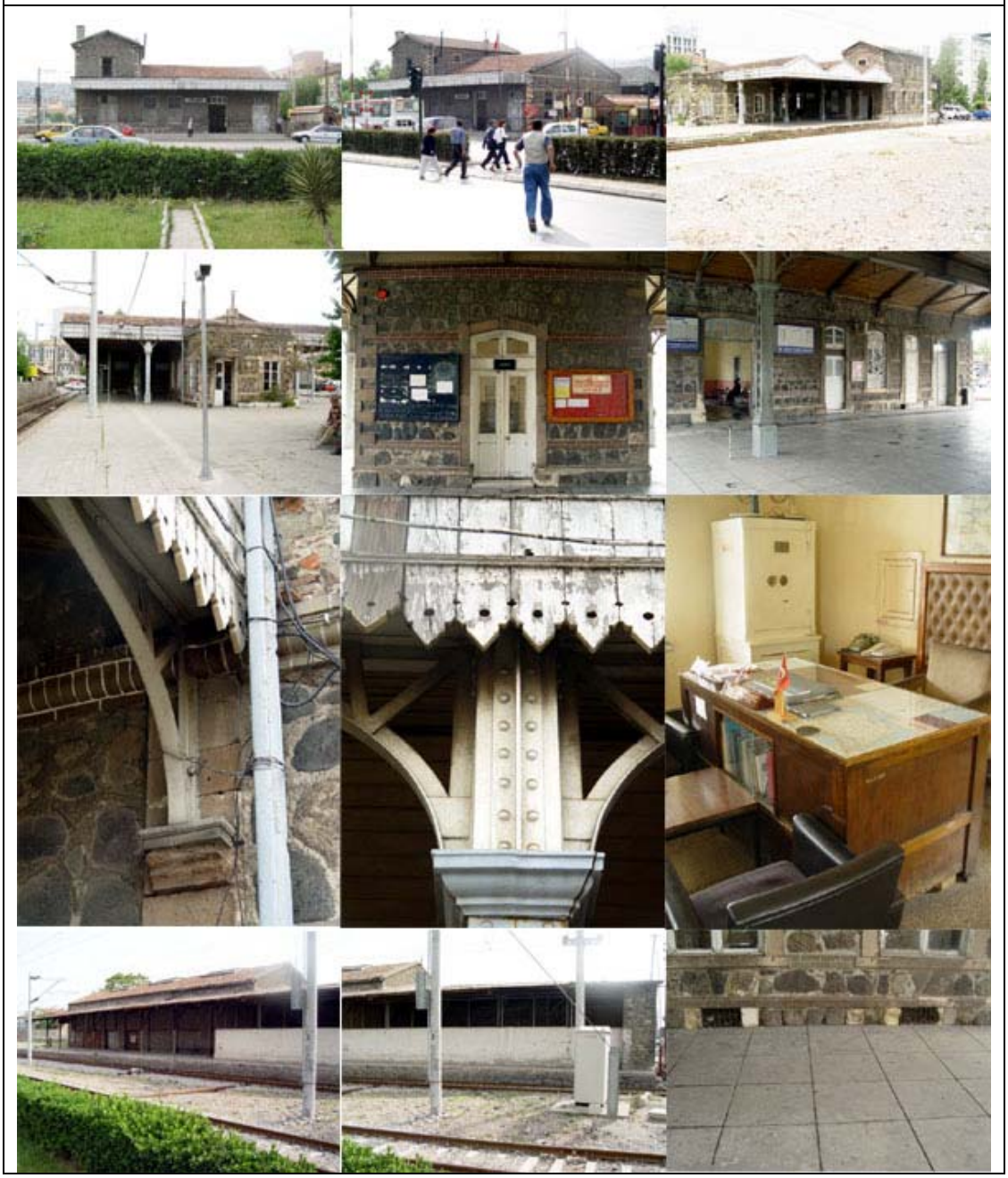
(12) "Bağlantı noktası"; yönetim alanı sınırlarında yer almamakla birlikte, arkeolojik, coğrafi, kültürel ve tarihi nedenlerle veya aynı vizyon ve tema etrafında yönetim ve gelişiminin sağlanması bakımından bu yer ile irtibatlandırılan kültürel varlıklardır.

APPENDIX C

THE STATIONS OF İZMİR - AYDIN RAILWAY LİNE

This appendix has the photographs and all drawings of the station complexes of İzmir – Aydın railway line. Moreover the tables showing the gathered information from the field survey has been shown in this chapter.

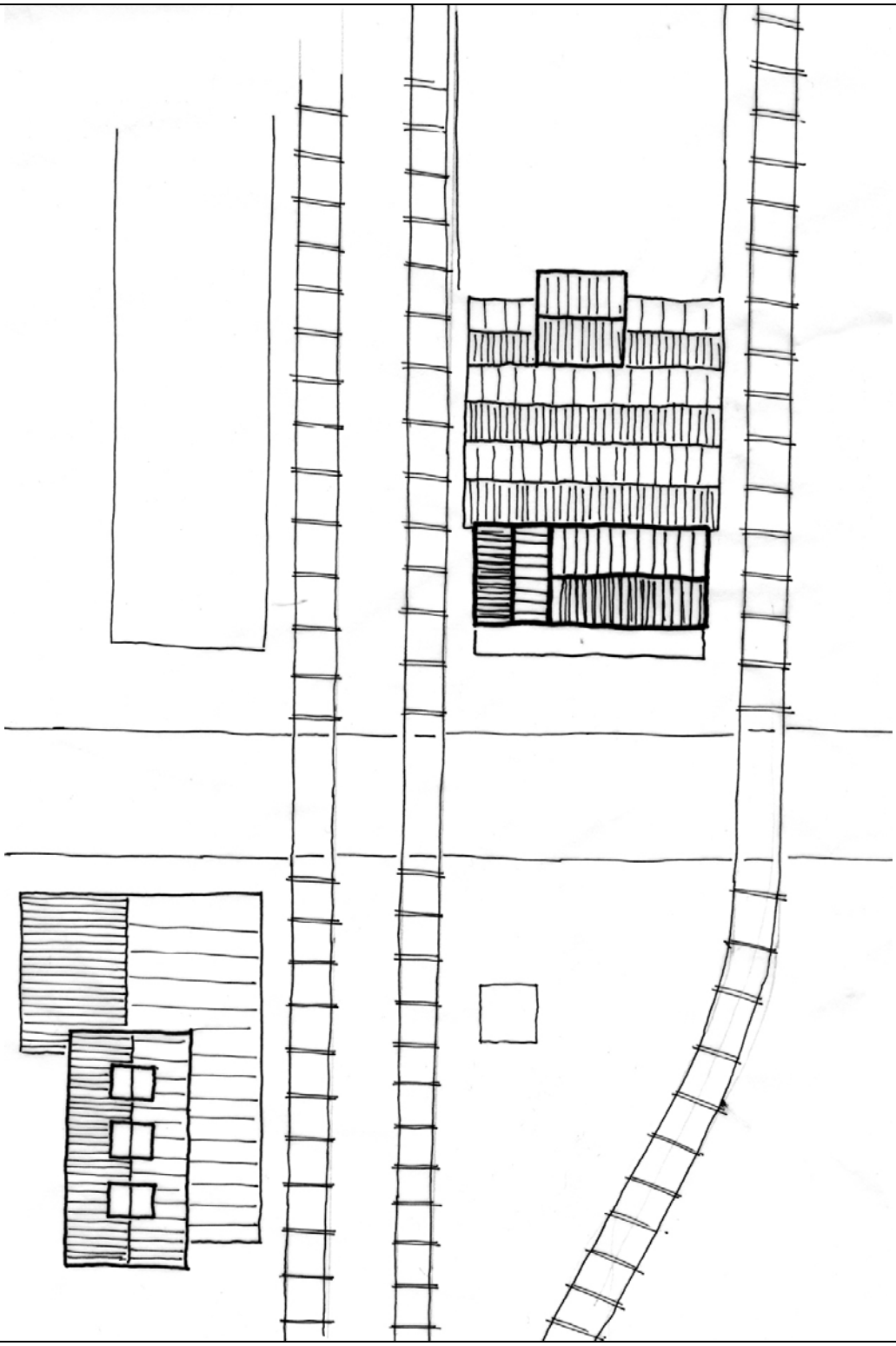
KEMER STATION
Photographs



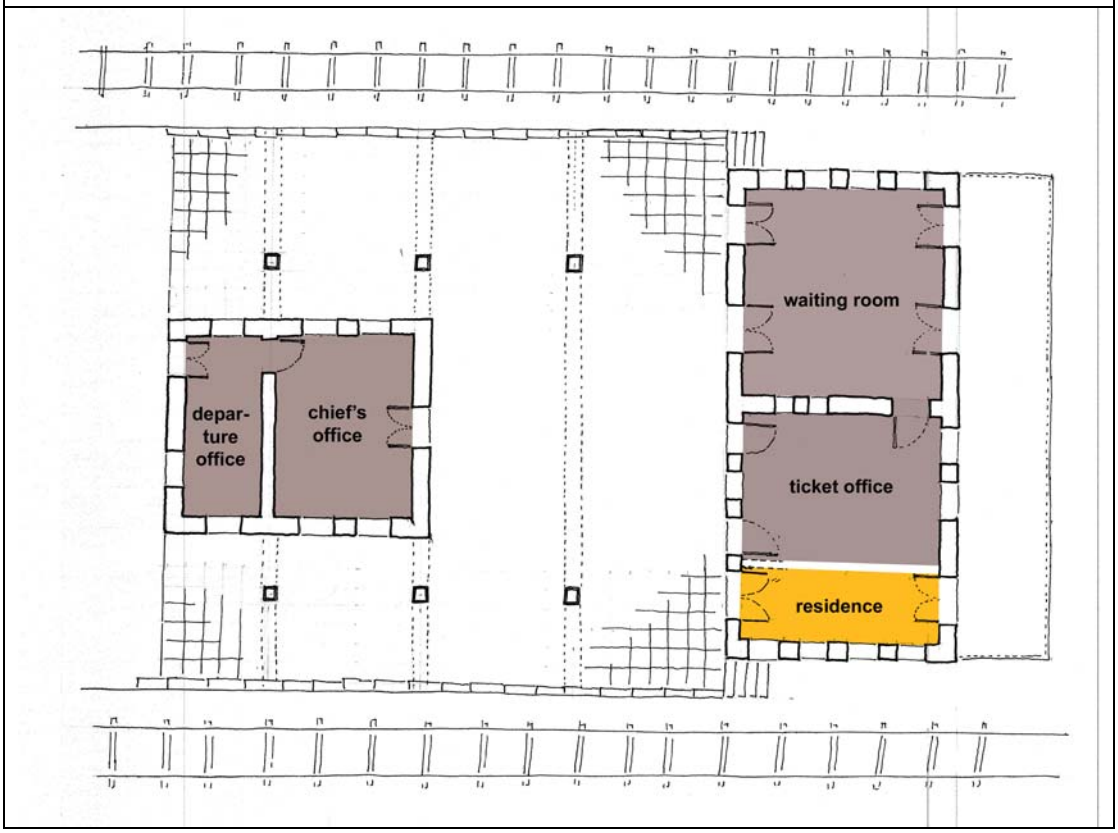
KEMER STATION

Drawings

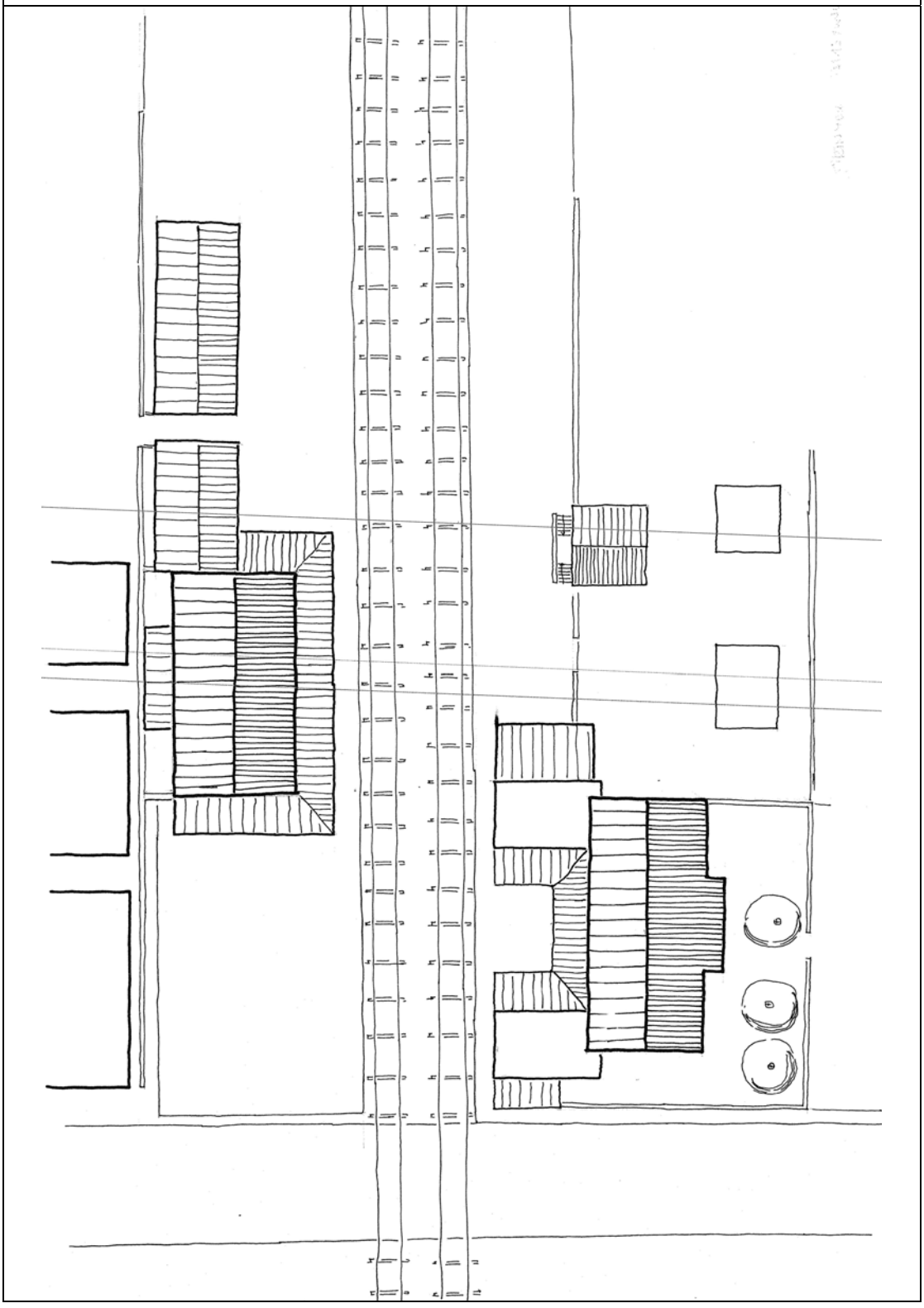
Site Plan



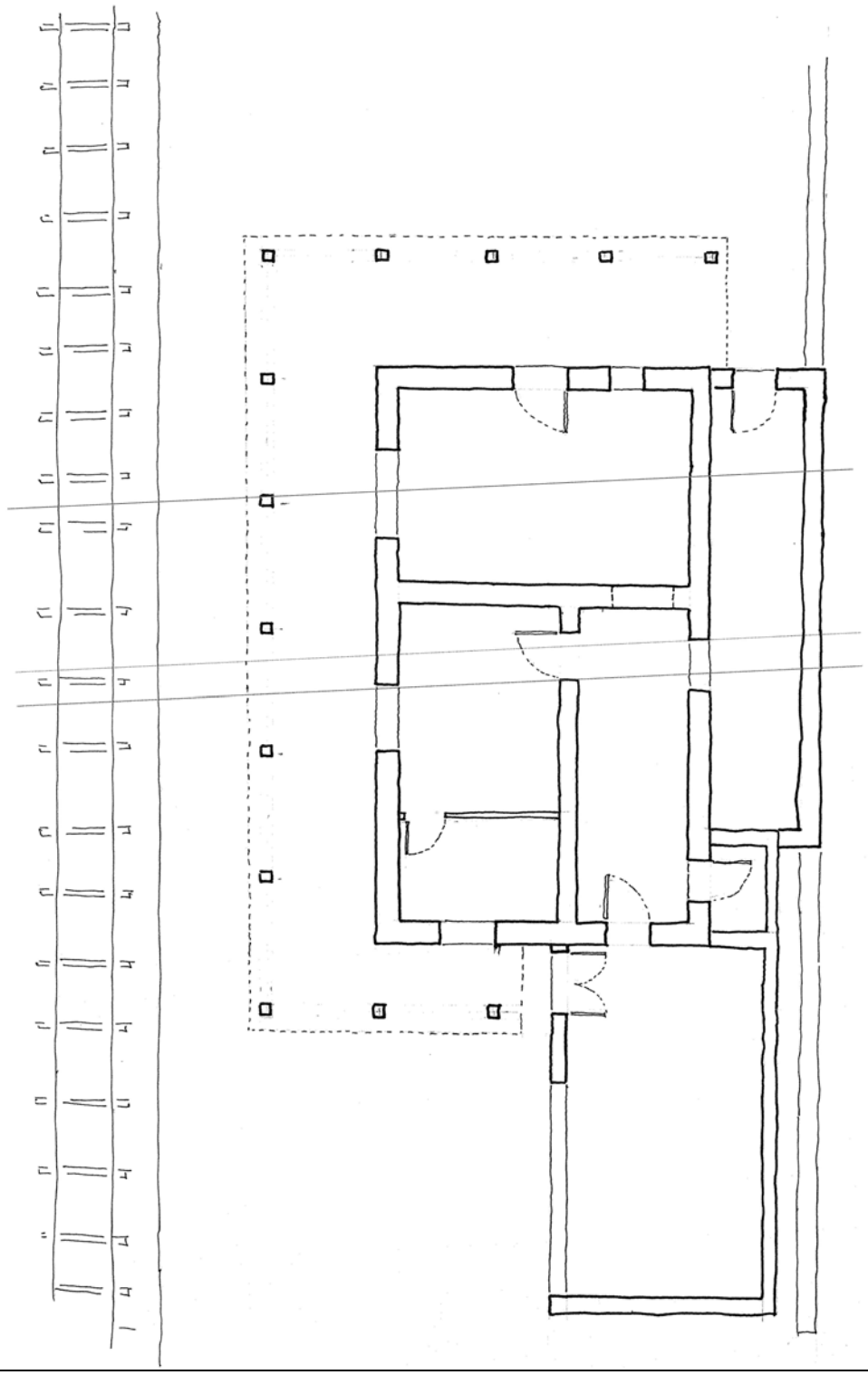
KEMER STATION
Drawings
Ground Floor Plan



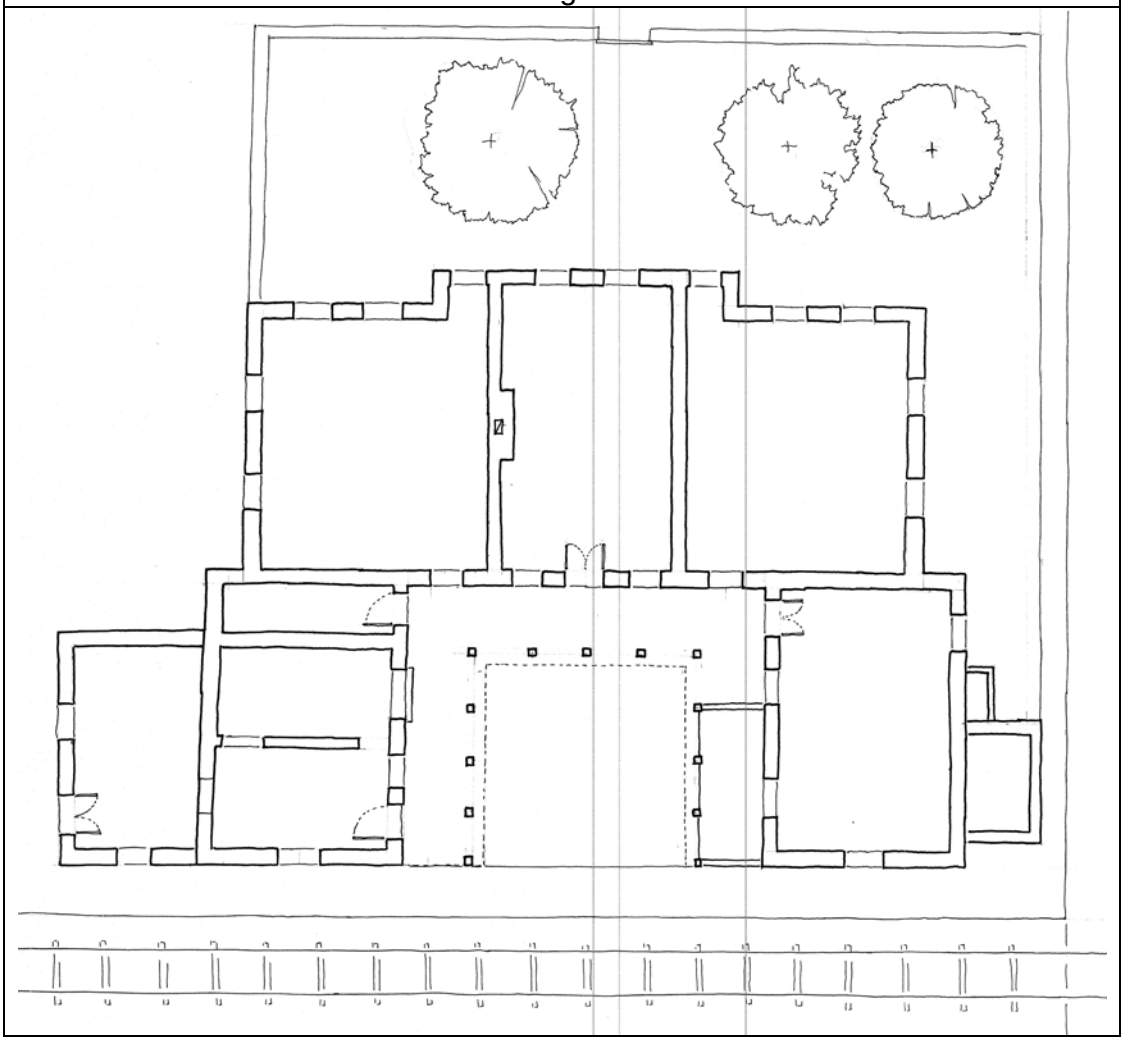
ŞİRİNYER STATION
Photographs

ŞİRİNYER STATION
Drawings
Site Plan


ŞİRİNYER STATION
Drawings
Depot Ground Floor Plan

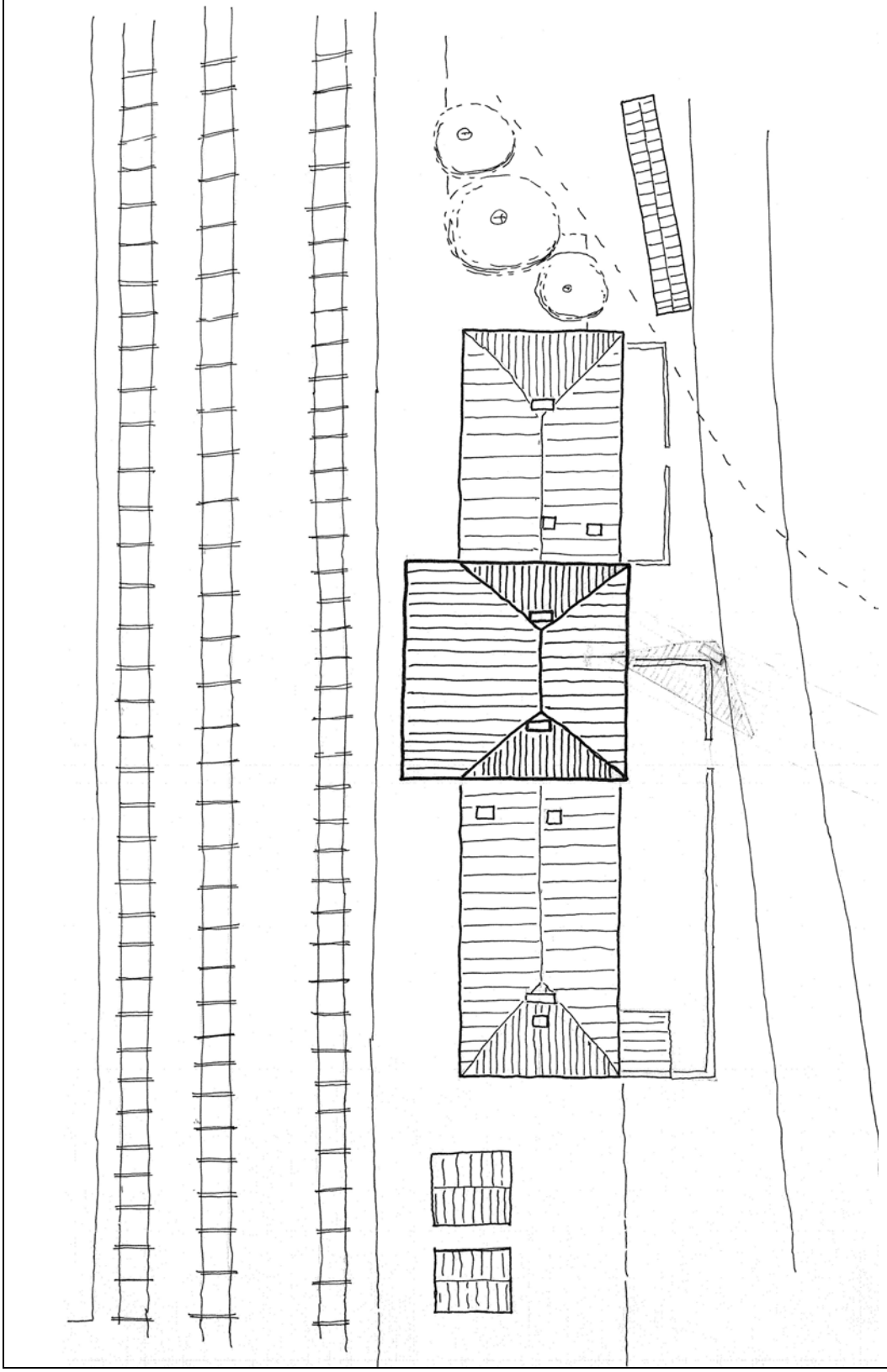


ŞİRİNYER STATION
Drawings
Main Station Building Ground Floor Plan

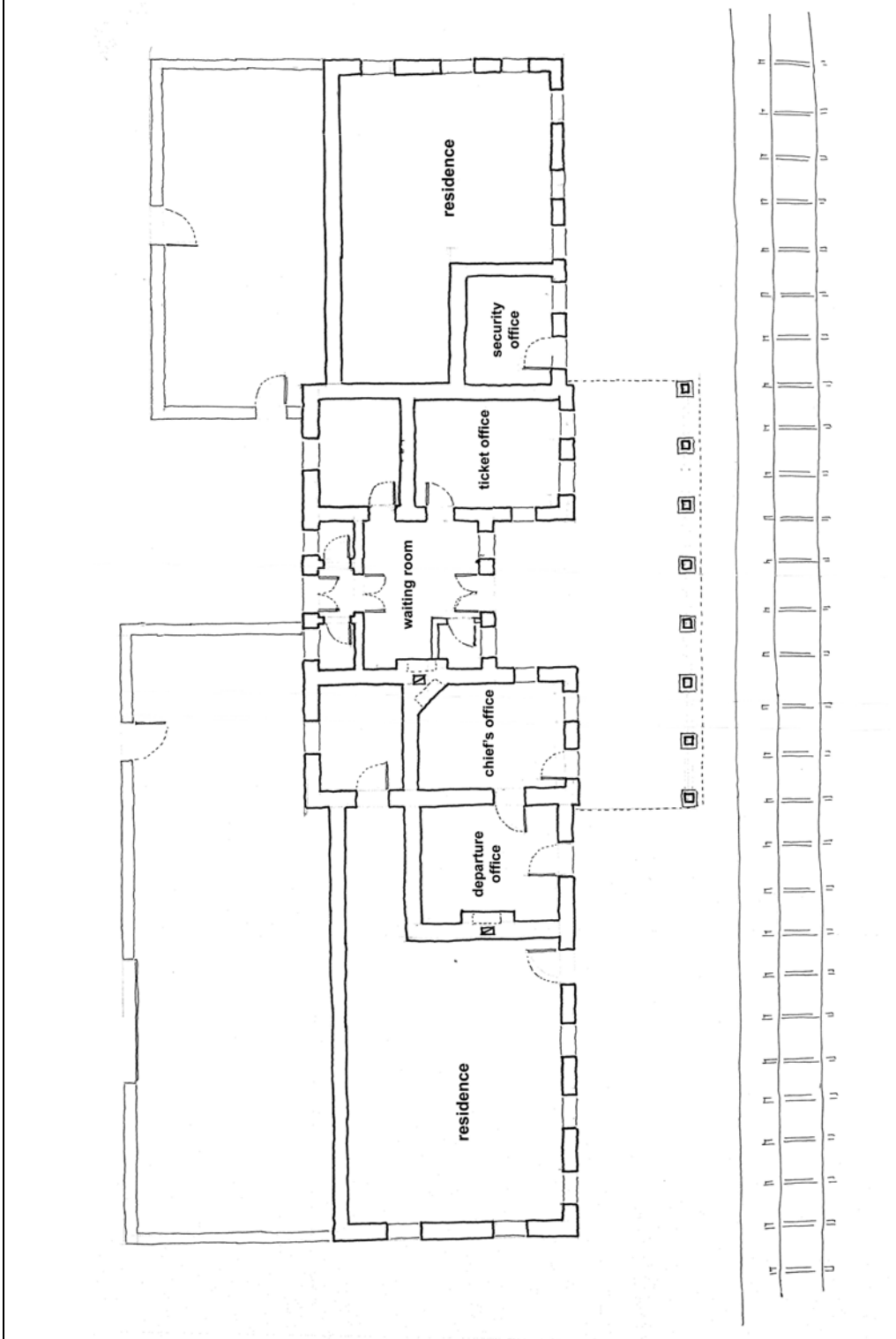


GAZİEMİR STATION
Photographs

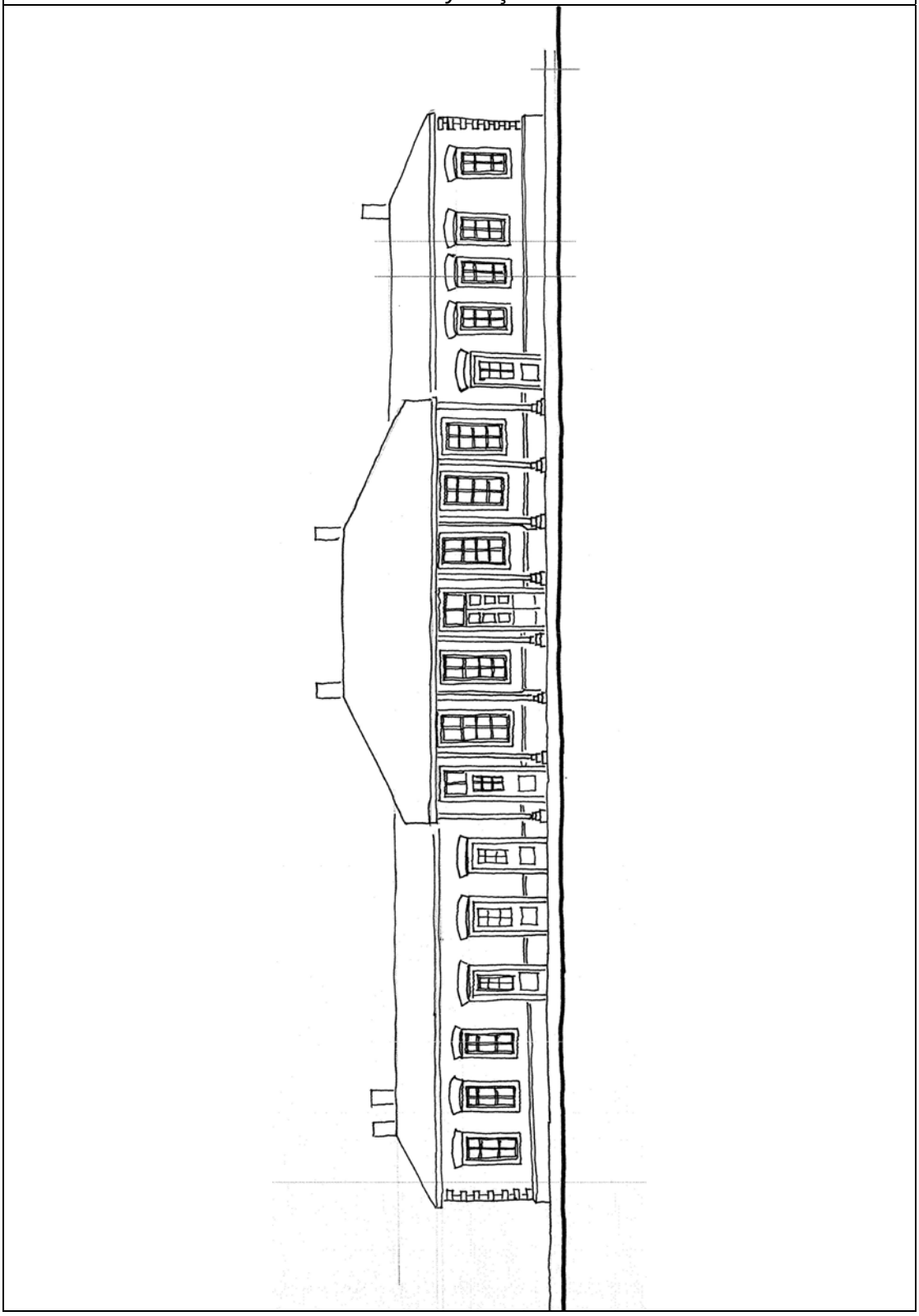
GAZİEMİR STATION
Drawings
Site Plan



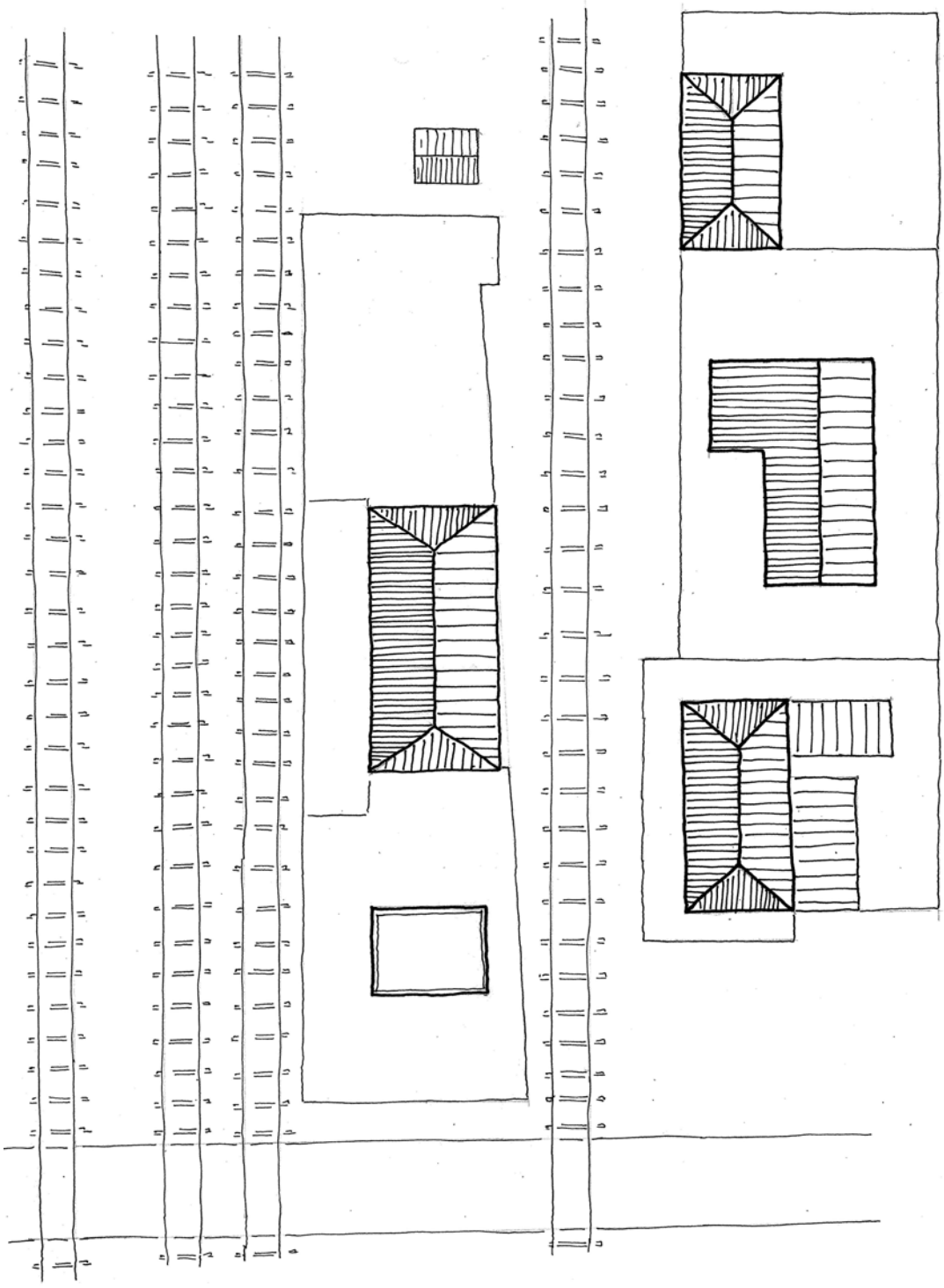
GAZİEMİR STATION
Drawings
Ground Floor Plan

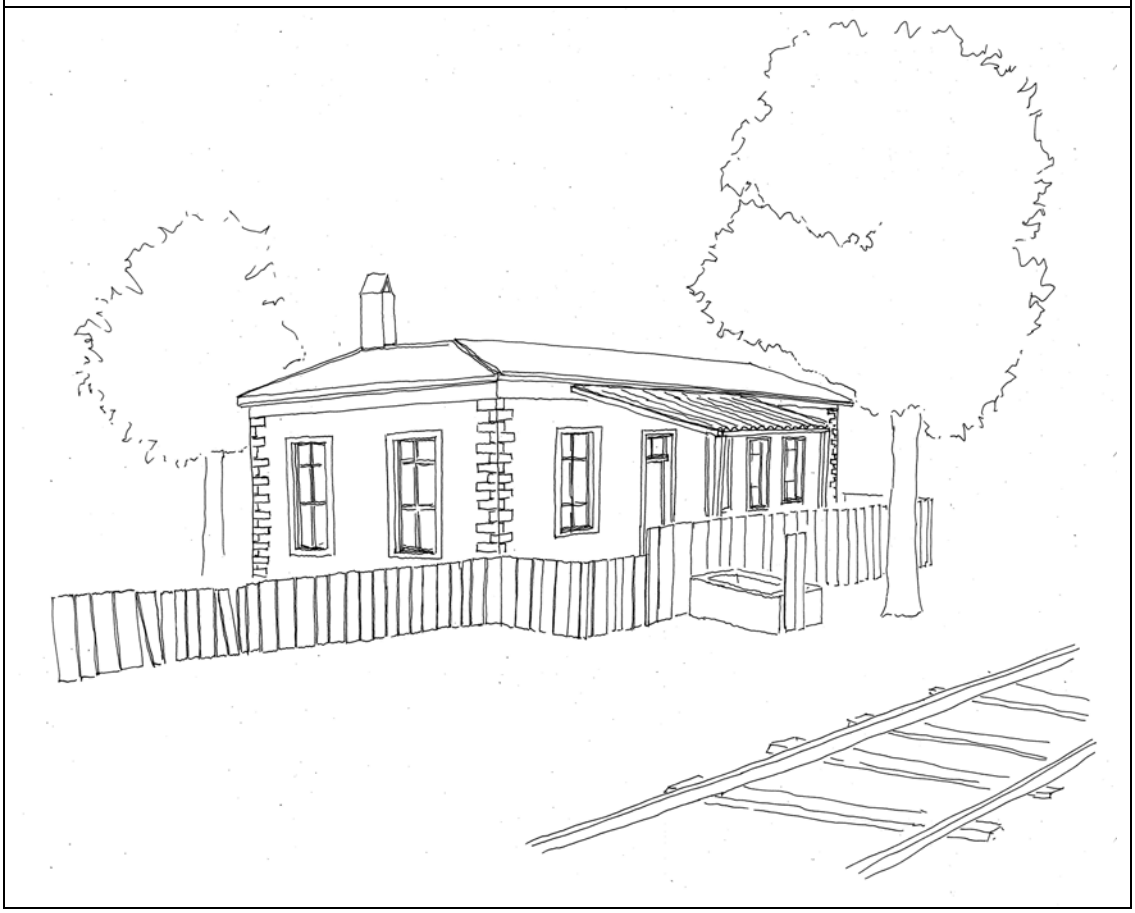


GAZİEMİR STATION
Drawings
Railway Façade



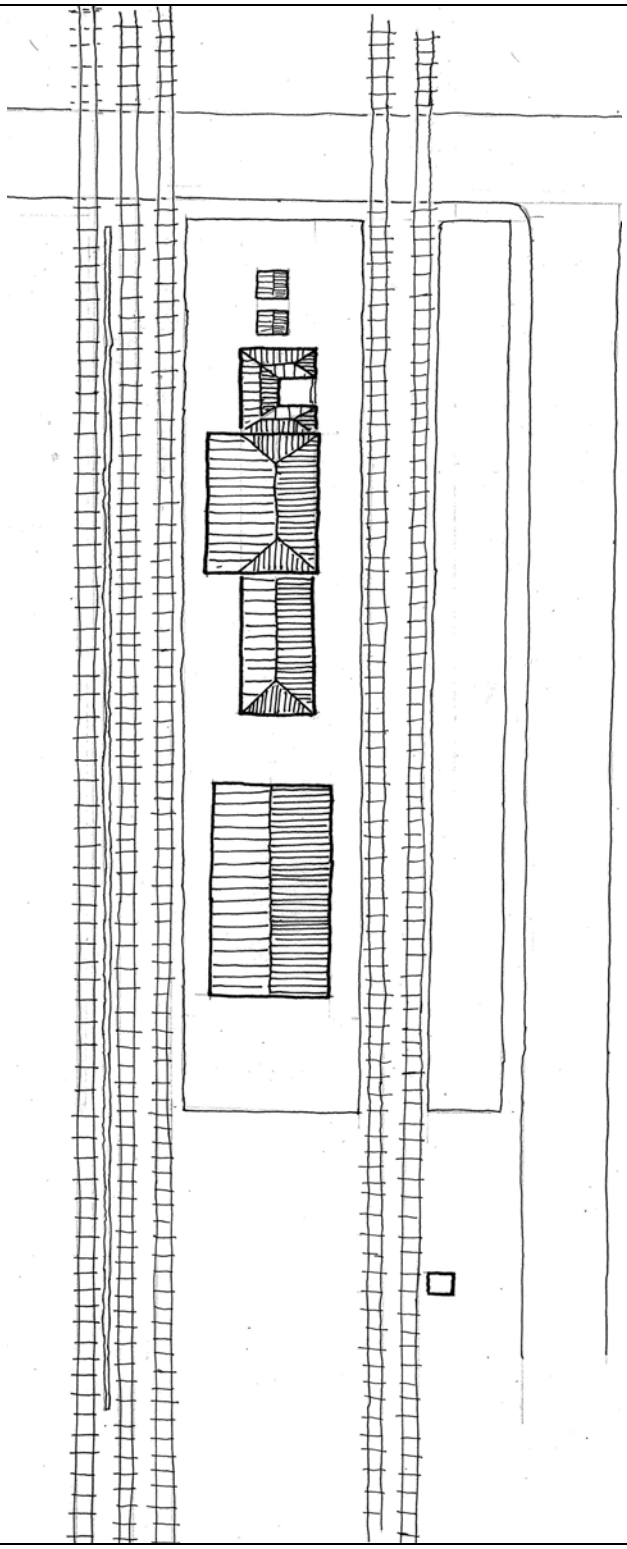
CUMAOVASI STATION
Photographs


CUMAOVASI STATION
Drawings
Site Plan


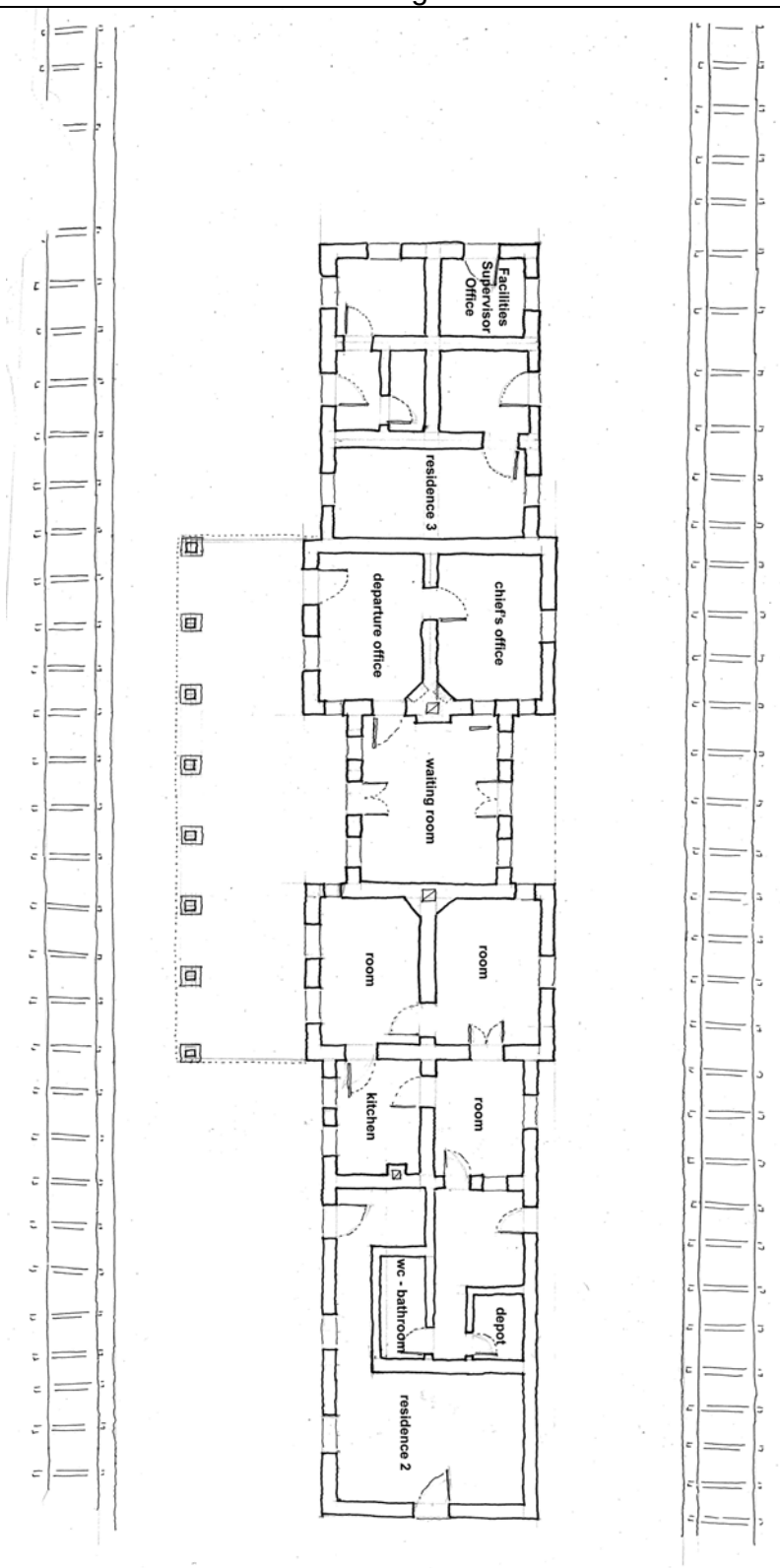
CUMAOVASI STATION
Drawings
Residence


TORBALI STATION
Photographs

TORBALI STATION
Drawings
Site Plan



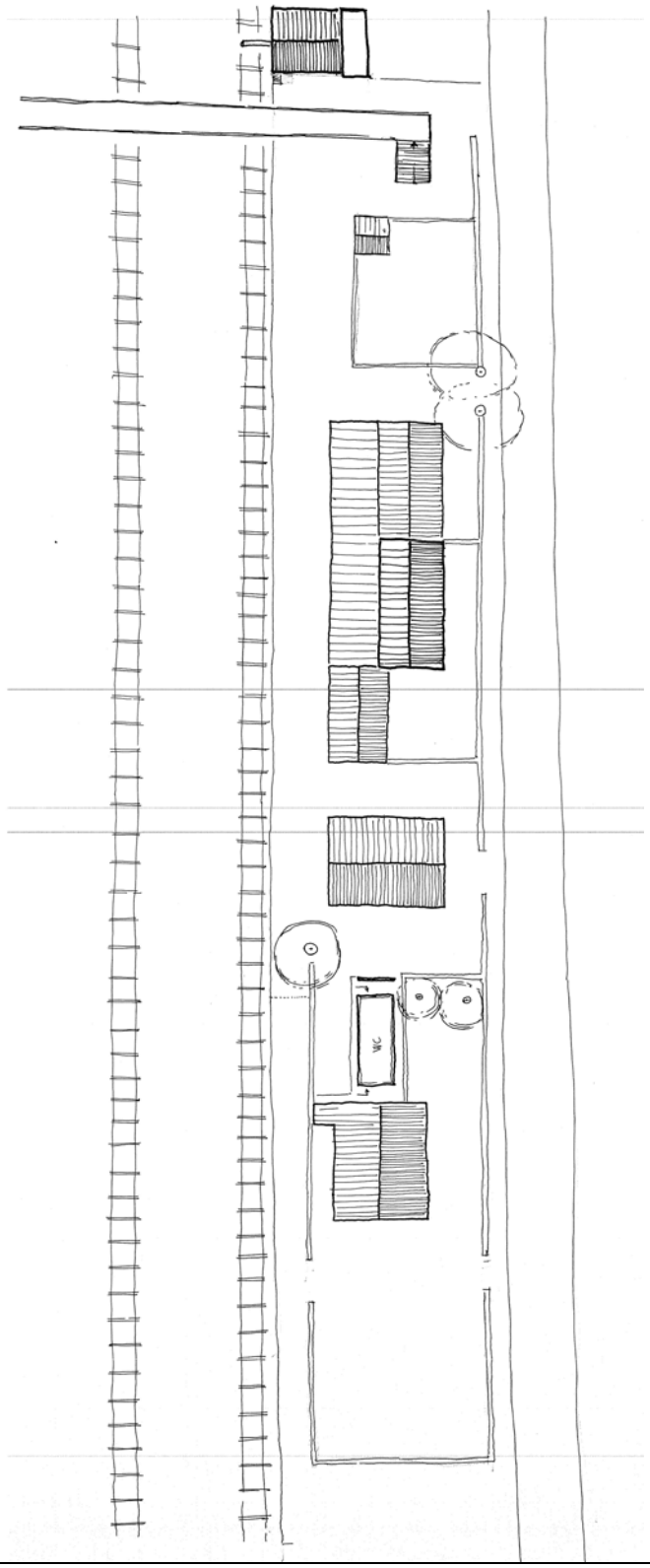
TORBALI STATION
Drawings
Main Station Building Ground Floor Plan



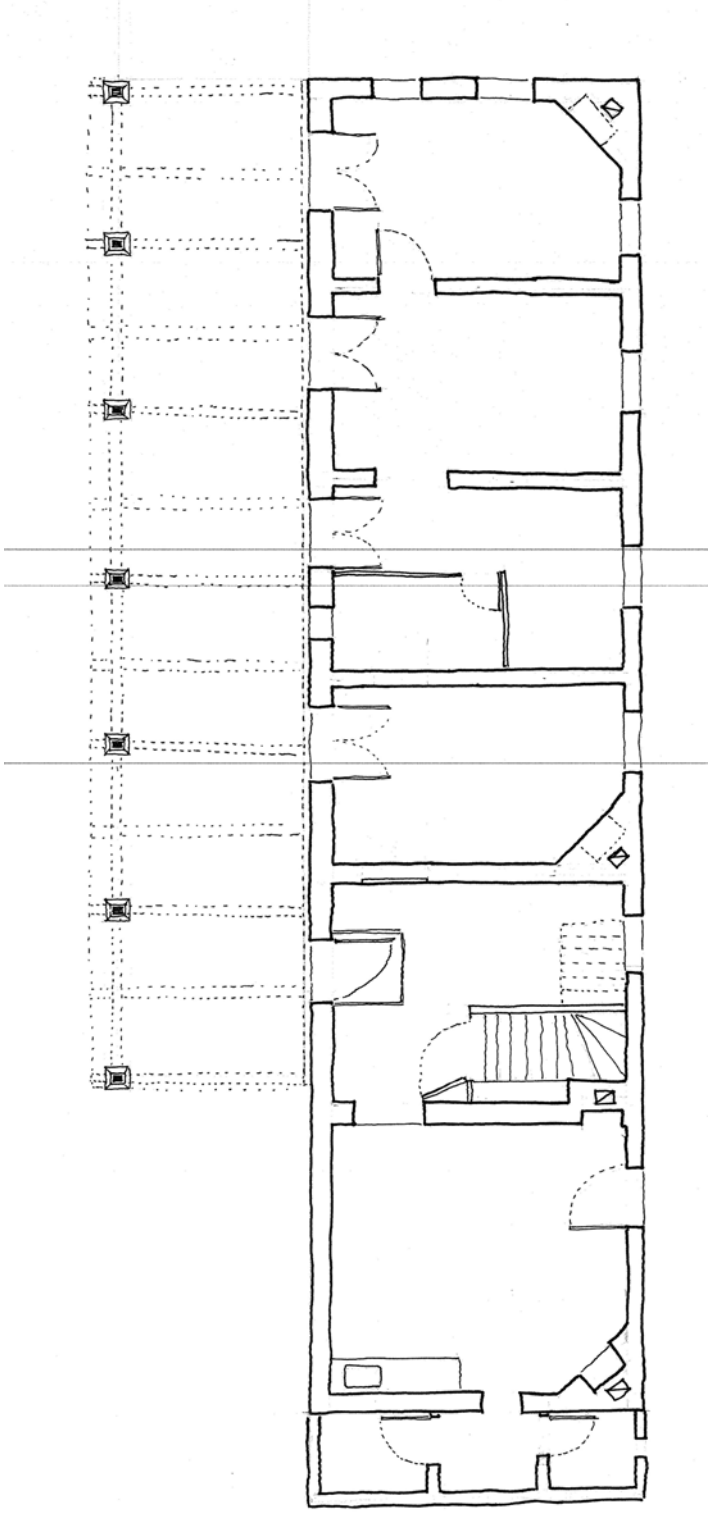
TEPEKÖY STATION
Photographs

SELÇUK STATION
Photographs

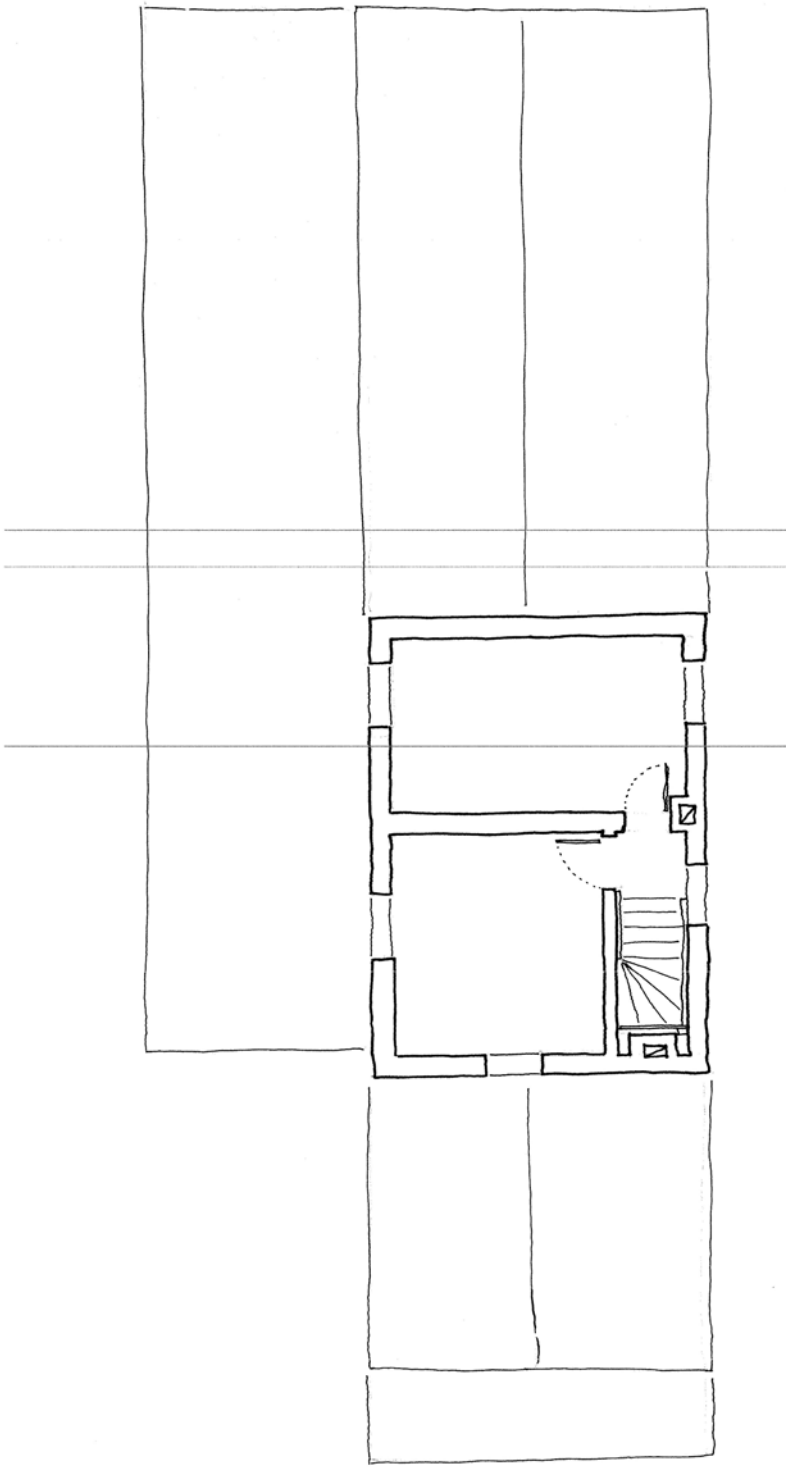
SELÇUK STATION
Drawings
Site Plan



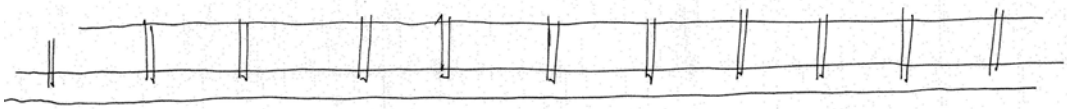
SELÇUK STATION
Drawings
Main Station Building Ground Floor Plan

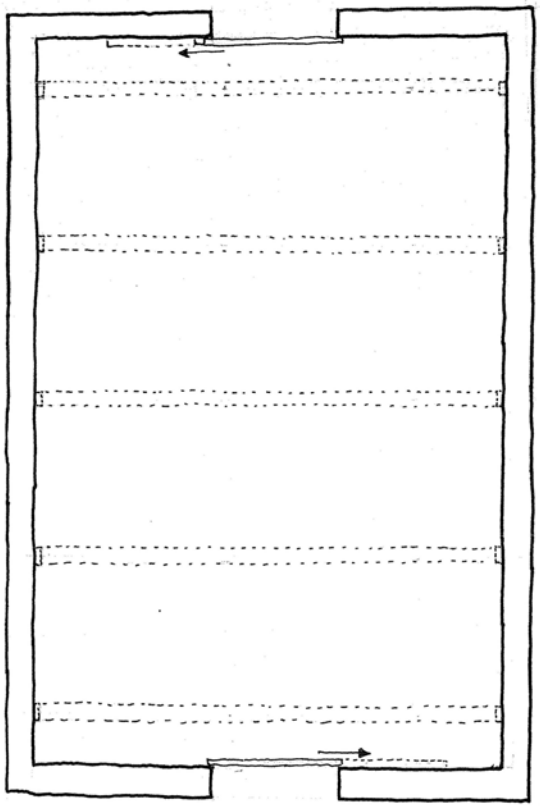


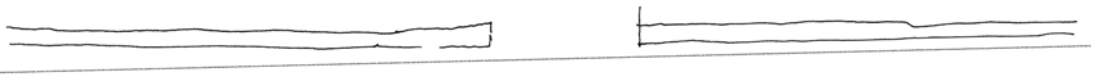
SELÇUK STATION
Drawings
Main Station Building First Floor Plan



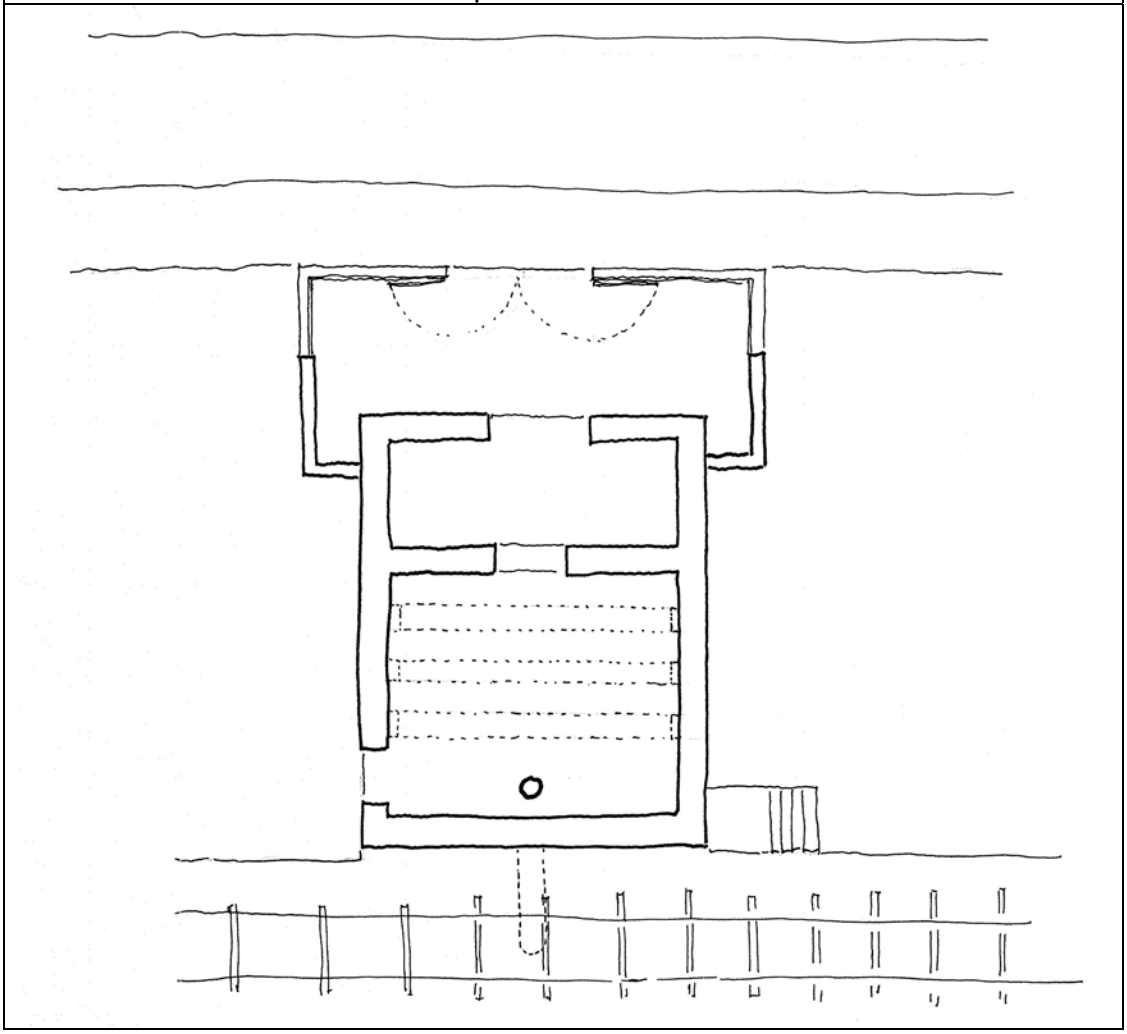
SELÇUK STATION
Drawings
Depot Ground Floor Plan



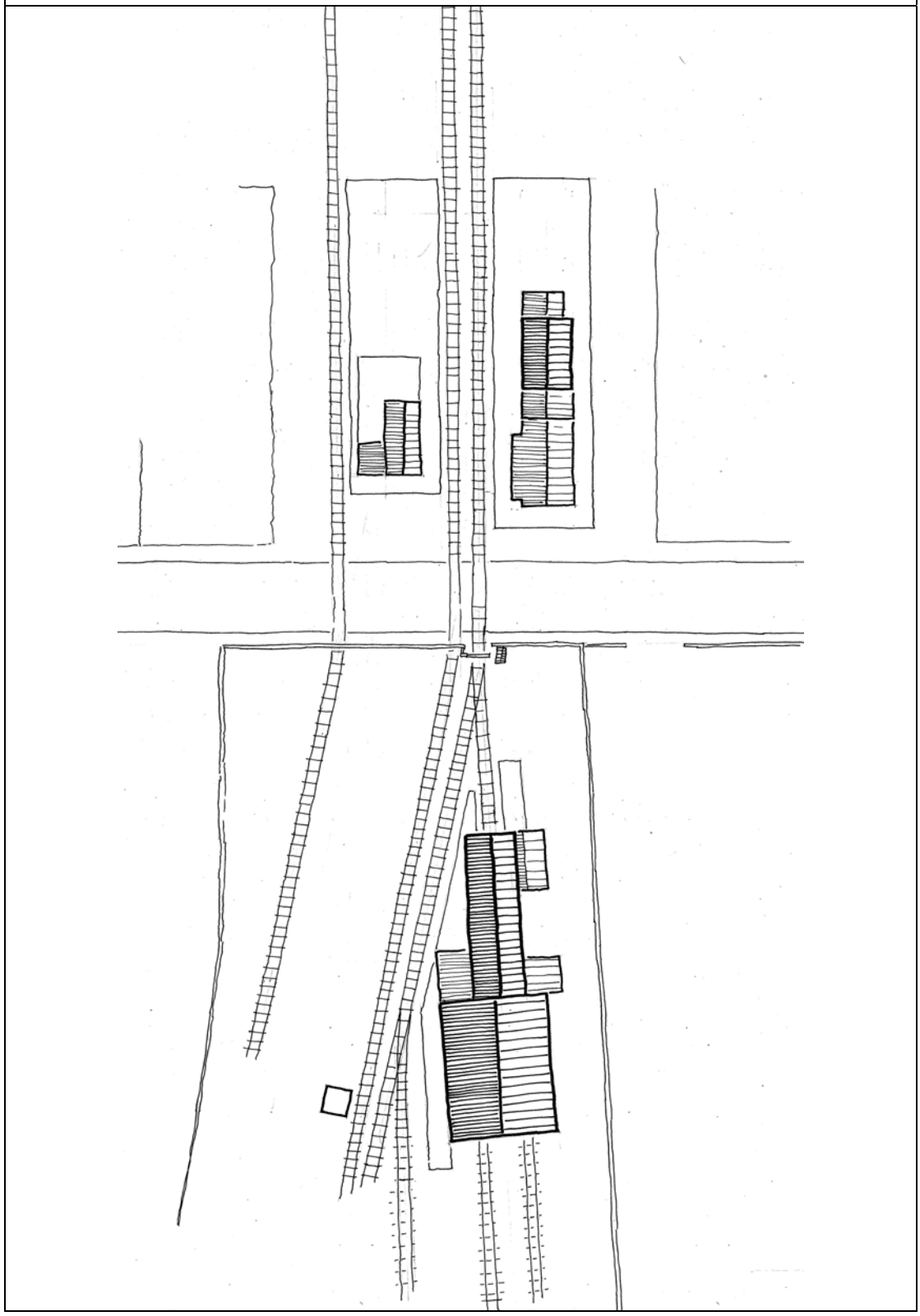




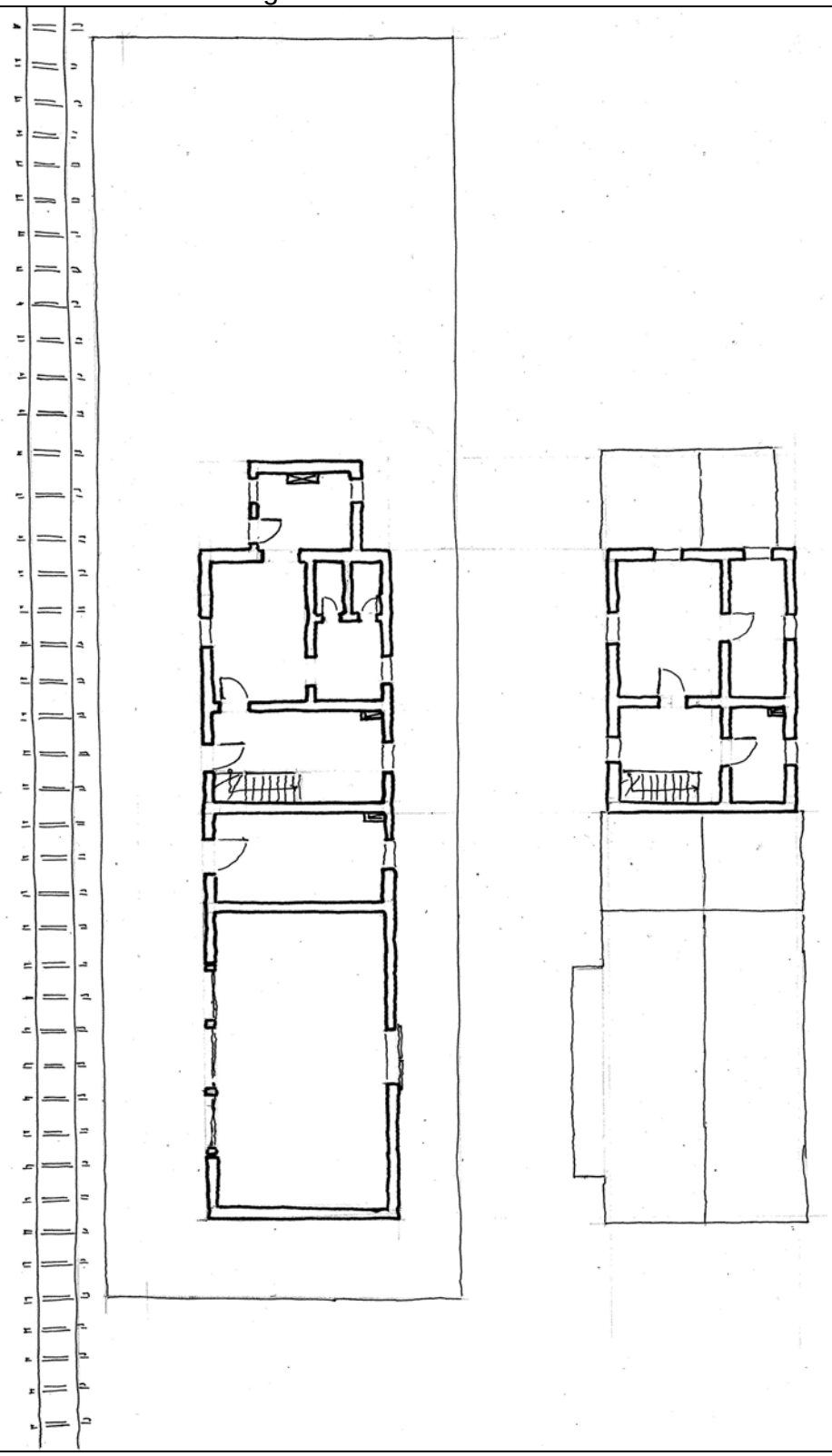
SELÇUK STATION
Drawings
Water Depot Ground Floor Plan



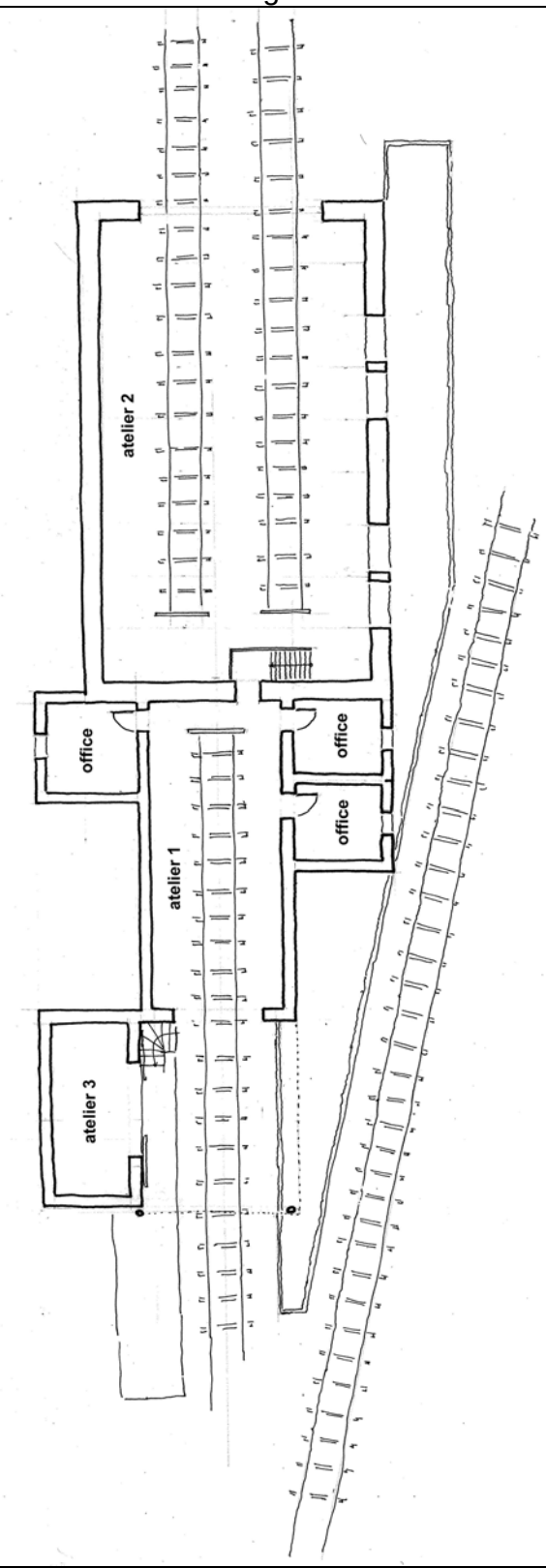
ÇAMLIK STATION
Photographs

ÇAMLIK STATION
Drawings
Site Plan


ÇAMLIK STATION
Drawings
Main Station Building Ground Floor Plan and First Floor Plan

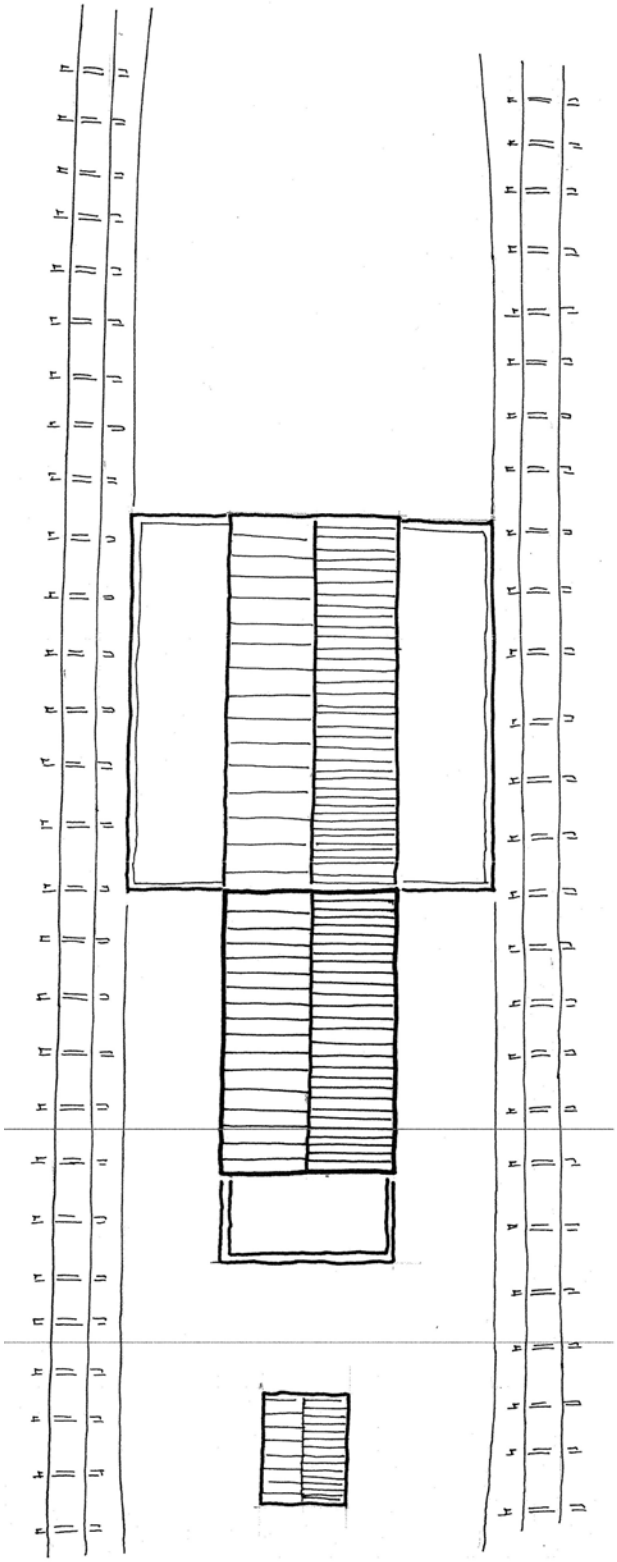


ÇAMLIK STATION
Drawings
Maintenance Building Ground Floor Plan

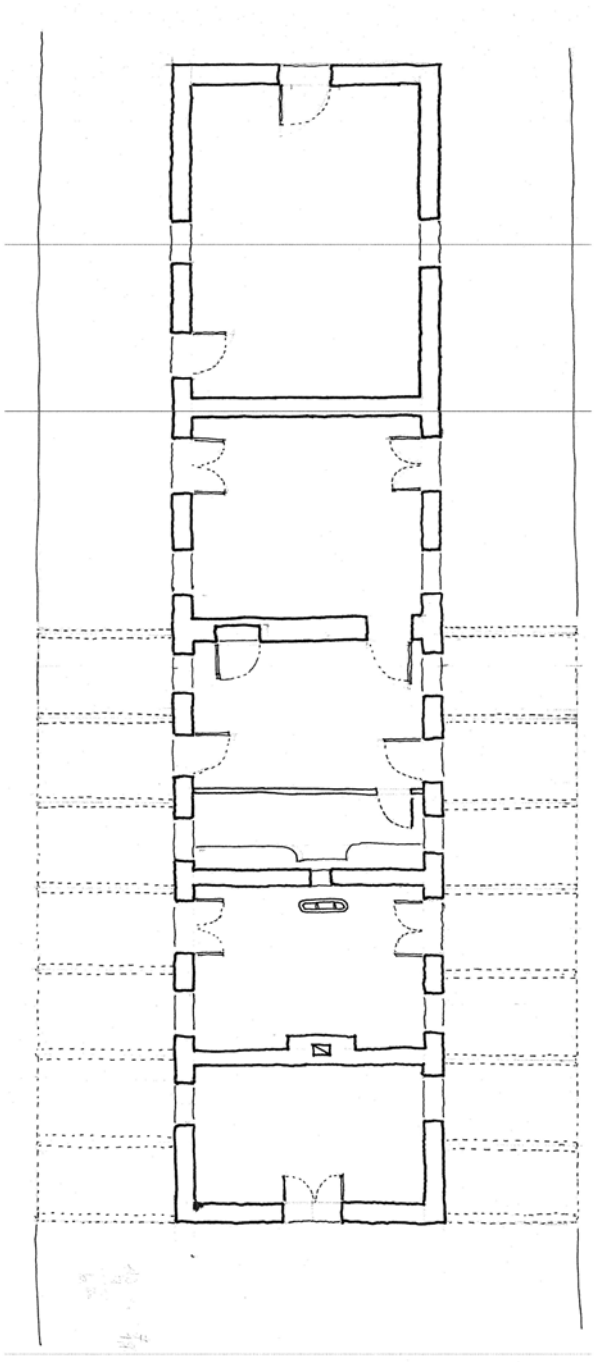


ORTAKLAR STATION
Photographs


ORTAKLAR STATION
Drawings
Site Plan



ORTAKLAR STATION
Drawings
Main Station Building Ground Floor Plan



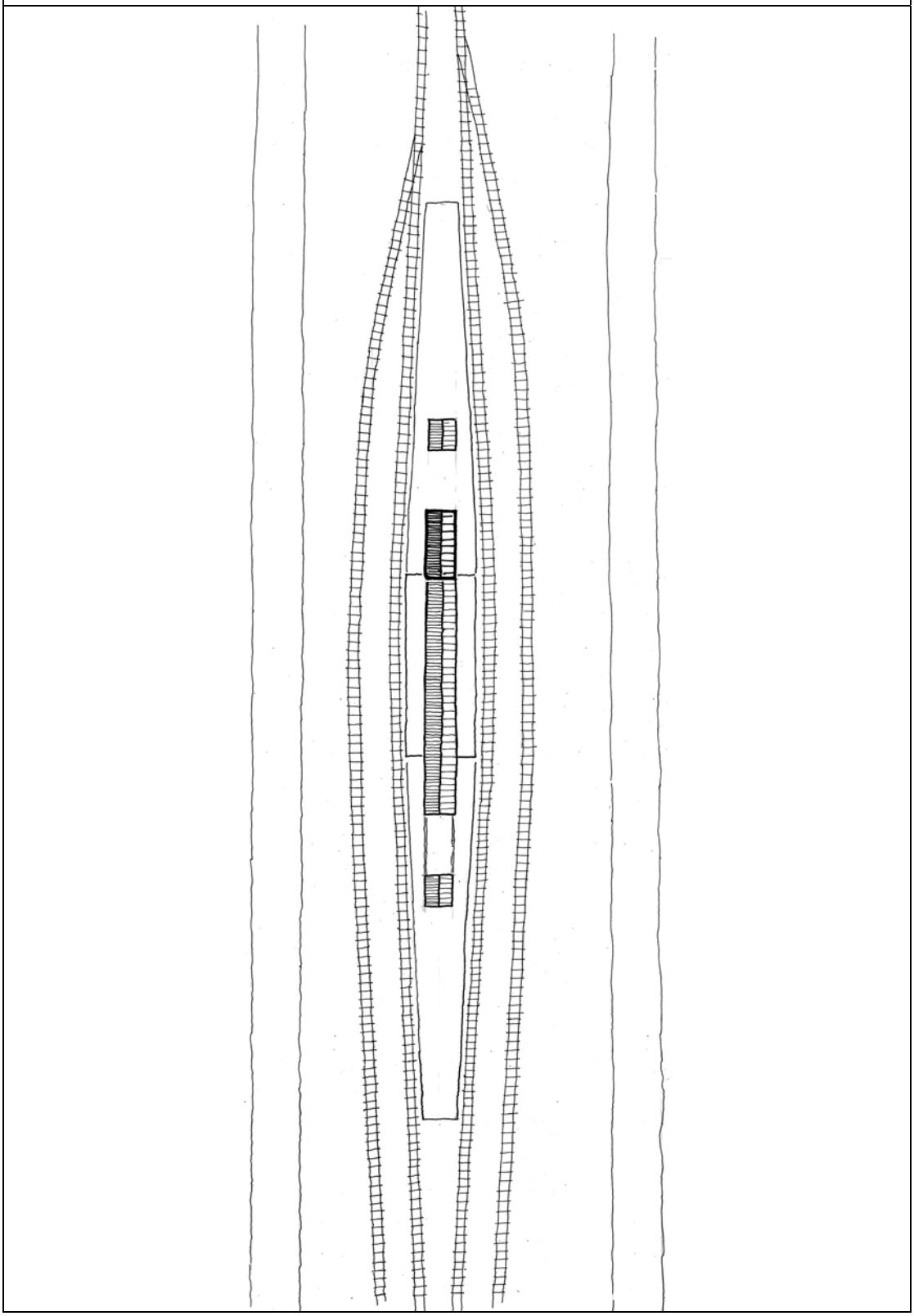
İNCİRLİOVA STATION

Photographs

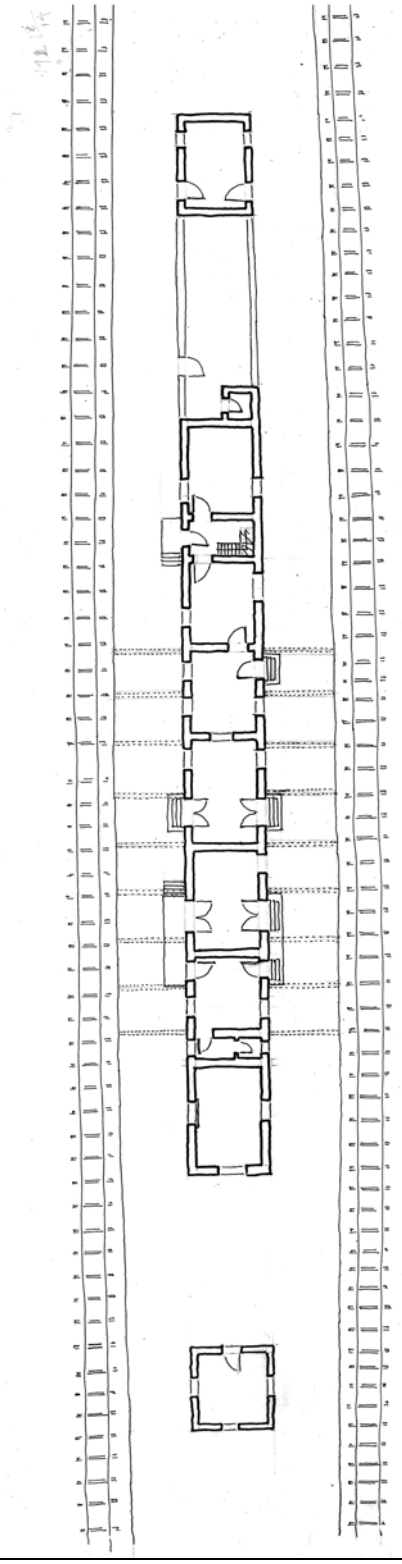
İNCİRLİOVA STATION

Drawings

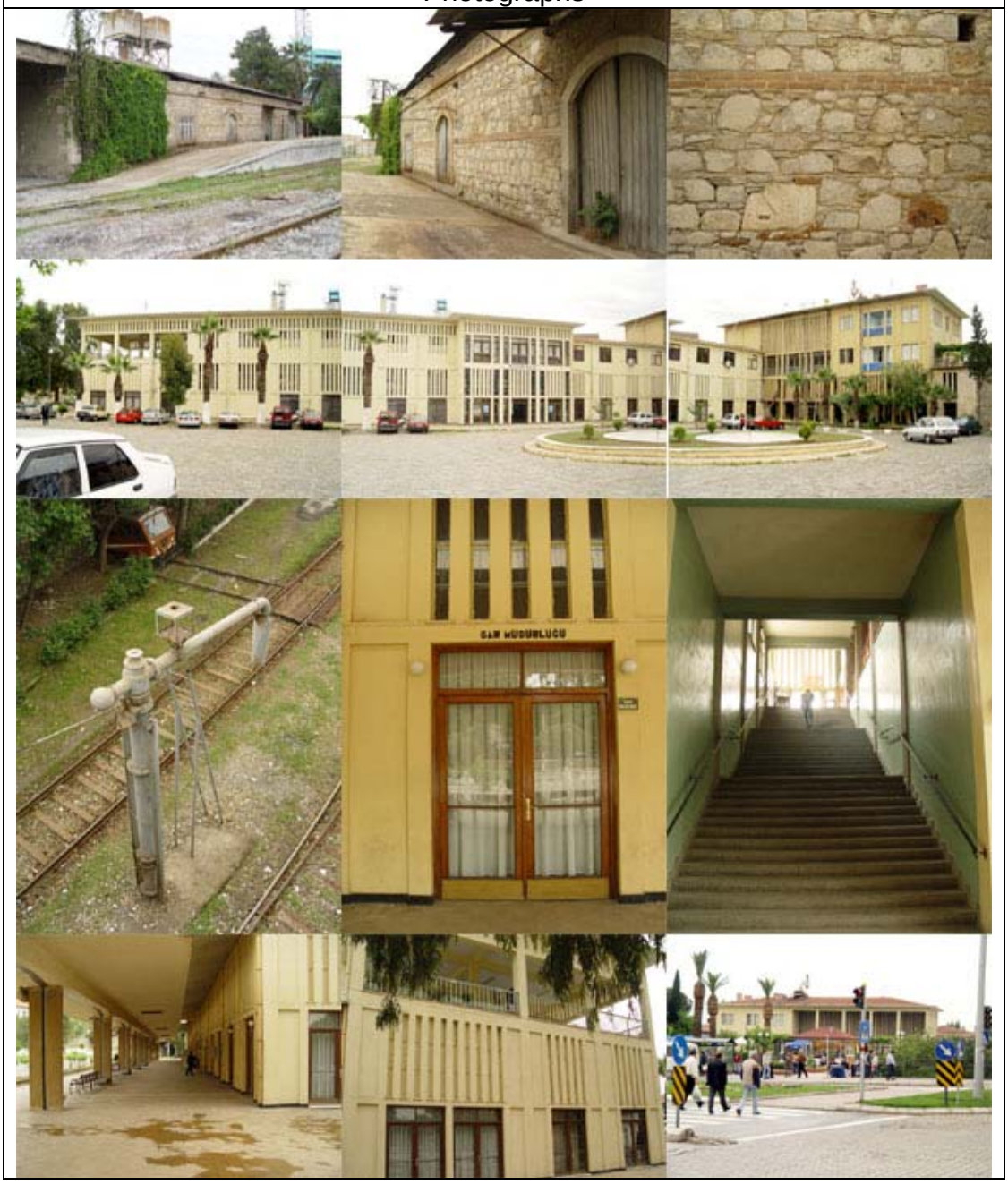
Site Plan



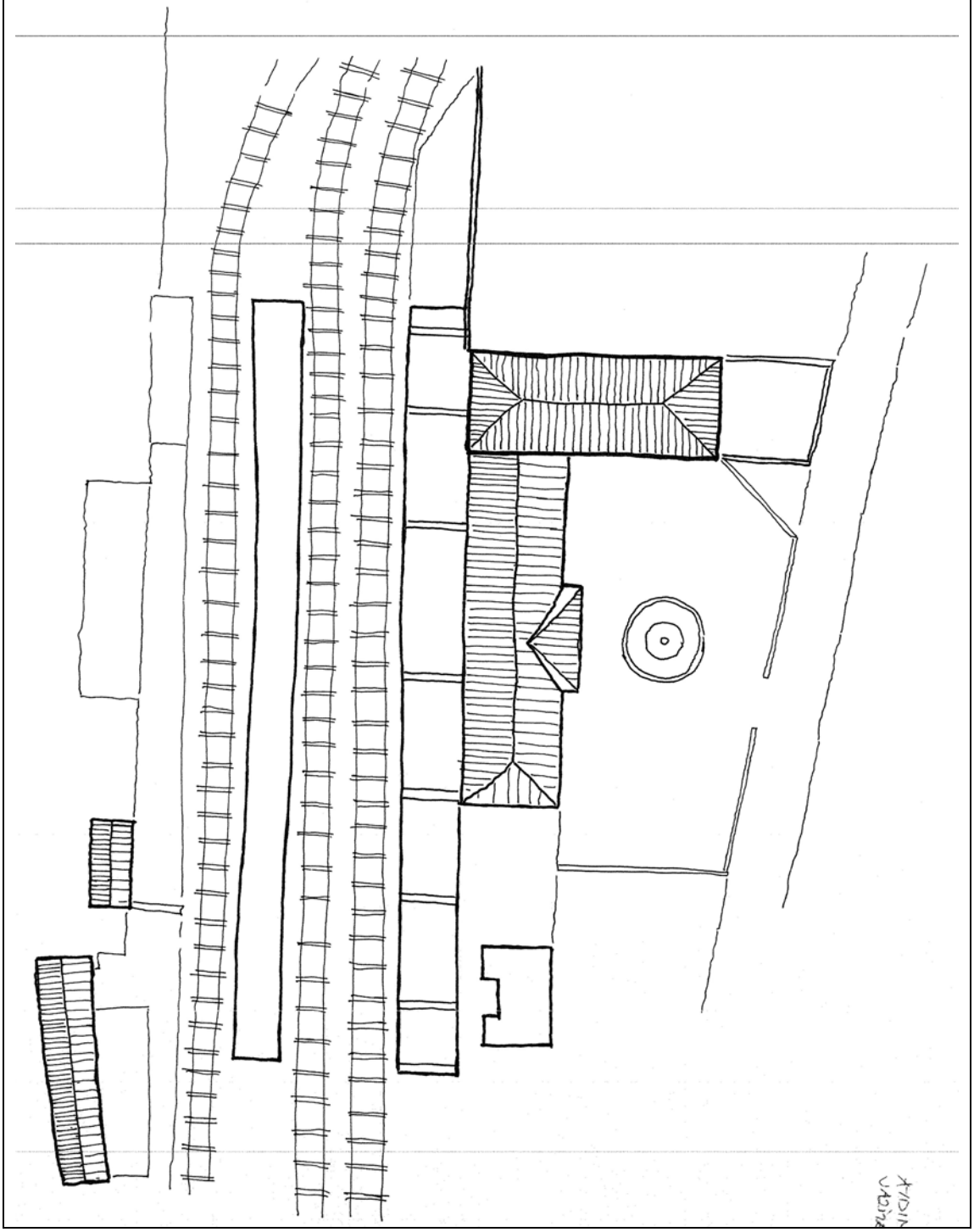
İNCİRLİOVA STATION
Drawings
Ground Floor Plan



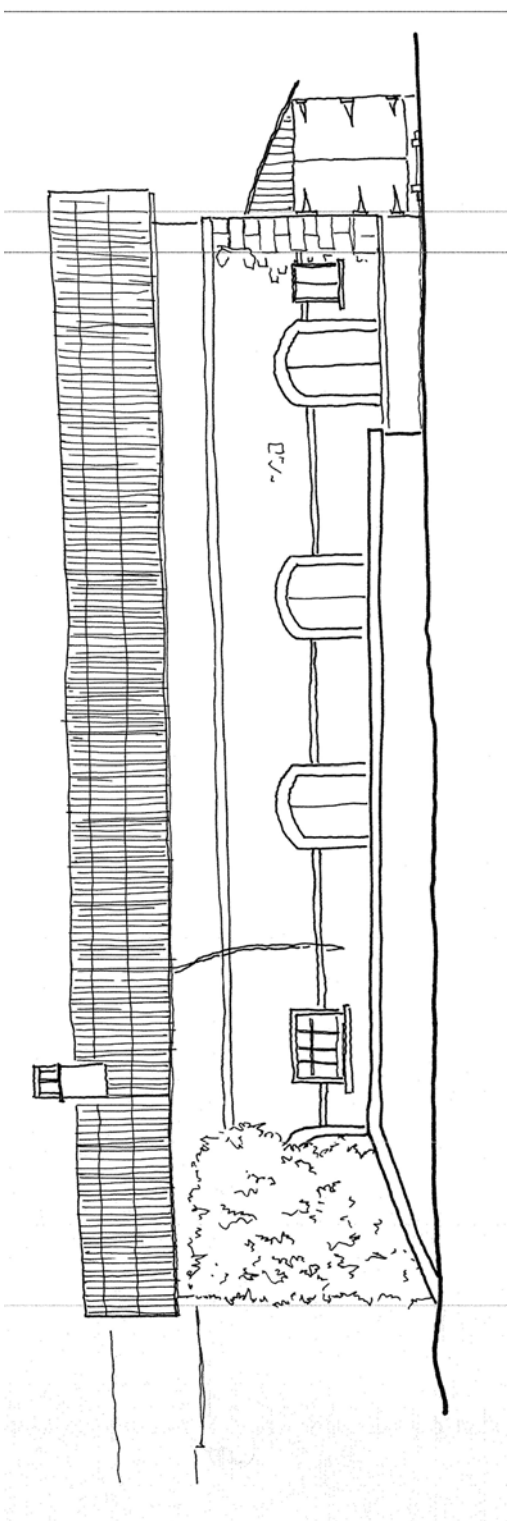
AYDIN STATION
Photographs



AYDIN STATION
Drawings
Site Plan



AYDIN STATION
Drawings
Depot Façade



ARCHITECTURAL ELEMENTS - Exterior

CHIMNEYS	Material	Condition	Addition	Removal	Alteration
Hilal					
Kemer	Brick	Good	----	----	yes
Şirinyer	Brick	good	----	----	yes
Gaziemir	Brick	bad	Yes	----	yes
Adnan Menderes					
Cumaovası					
Develiköy					
Pancar					
Torbalı	Brick	Bad	----	----	yes
Tepeköy					
Sağlık					
Selçuk	Brick	Good	----	----	yes
Çamlık	Brick	Good	----	----	yes
Ortaklar	Brick	Bad	----	----	yes
Germencik					
İncirliova	Brick	Normal	----	----	yes
Aydın					

ARCHITECTURAL ELEMENTS - Exterior

DOORS	Material	Condition	Addition	Removal	Alteration
Hilal					
Kemer	Wood	Bad	----	----	yes
Şirinyer	wood	Bad – poor	----	Yes	yes
Gaziemir	Wood	Bad – poor	----	----	yes
Adnan Menderes					
Cumaovası					
Develiköy					
Pancar					
Torbalı	Wood	Bad	----	----	yes
Tepeköy					
Sağlık					
Selçuk	Wood	Normal	----	----	yes
Çamlık	Wood	Discoloration – bad	----	-----	yes
Ortaklar	Wood – metal	Bad	----	Yes	yes
Germencik					
İncirliova	Wood	Normal	----	----	yes
Aydın					

ARCHITECTURAL ELEMENTS - Exterior

WINDOWS	Material	Condition	Addition	Removal	Alteration
Hilal					
Kemer	Wood	Bad	----	----	yes
Şirinyer	wood	Normal - bad	----	----	yes
Gaziemir	Wood	Bad	----	----	yes
Adnan Menderes					
Cumaovası					
Develiköy					
Pancar					
Torbalı	Wood	Bad	----	----	yes
Tepeköy					
Sağlık					
Selçuk	Wood	Normal	----	----	yes
Çamlık	Wood	Normal	----	----	yes
Ortaklar	Wood	Bad	----	----	yes
Germencik					
İncirliova	Wood	Normal	----	----	yes
Aydın					

ARCHITECTURAL ELEMENTS - Exterior

GUTTERS	Material	Condition	Addition	Removal	Alteration
Hilal					
Kemer	Metal - plastic	good	----	----	yes
Şirinyer	----	----	----	----	----
Gaziemir	Metal	Bad	Yes	----	----
Adnan Menderes					
Cumaovası					
Develiköy					
Pancar					
Torbalı	----	----	----	----	----
Tepeköy					
Sağlık					
Selçuk	Metal - plastic	Good	Yes	----	---
Çamlık	----	----	----	----	----
Ortaklar	Metal	Good	----	----	yes
Germencik					
İncirliova	Metal– plastic	Good	----	----	yes
Aydın					

MATERIAL DECAY – Station Buildings - Exterior

	Ground Level	1st Floor	Roof
Hilal	The station building was demolished during the metro construction.		
Kemer	Discoloration in stone due to rising damp	Discoloration in stone due rain penetration and heavy traffic	Material loss in tiles – rain penetration
Şirinyer	Discoloration and material loss in stone – material loss in joints	Discoloration and material loss in stone – material loss in joints	Material loss in tiles – rain penetration
Gaziemir	Discoloration and disintegration in timber – discoloration in stone and material loss in joints		Disintegration even fungi in timber – rain penetration
Adnan Menderes	This station was constructed in 1980's		
Cumaovası	This station was constructed in 1950's		
Develiköy	This station is closed		
Pancar			
Torbalı	Discoloration in timber - Discoloration in stone due to rising damp - Discoloration, material loss and flaking due to rising damp.		Discoloration in timber and material loss in tiles.
Tepeköy	This station was constructed in 1950's		
Sağlık	This station is closed		
Selçuk	Discoloration in stone due to rain penetration	Discoloration in stone due to rain penetration	Rain penetration
Çamlık	Discoloration in timber - Discoloration in stone due to rising damp - Discoloration in brick due to rising damp		Rain penetration
Ortaklar	Discoloration in timber – Discoloration and material loss due to rising damp	Discoloration and material loss due to rising damp	Discoloration in timber and material loss in tiles and rain penetration
Germencik	The station was constructed in 1950's		
İncirliova	Discoloration in timber due to rain penetration – Discoloration in stone due to rising damp	Discoloration due to rain penetration	Discoloration in timber due to Rain penetration
Aydın	The station was constructed in 1950's		

STRUCTURAL SYSTEM & CONSTRUCTION MATERIAL – Station Building - Exterior

	Ground Level	1st Floor	Roof
Hilal	The station building was demolished during the metro construction.		
Kemer	Stone masonry with timber flooring	Stone masonry with timber flooring	Timber
Şirinyer	Stone masonry with timber flooring	Stone masonry with timber flooring	Timber
Gaziemir	Stone masonry with timber flooring		Timber
Adnan Menderes	This station was constructed in 1980's		
Cumaovası	This station was constructed in 1950's		
Develiköy	This station is closed		
Pancar			
Torbalı	Stone sub-foundation, brick masonry with timber flooring		Timber
Tepeköy	This station was constructed in 1950's		
Sağlık	This station is closed		
Selçuk	Stone masonry with timber flooring	Stone masonry with timber flooring	Timber
Çamlık	Stone sub-foundation, stone and brick masonry with timber flooring	Brick masonry with timber flooring	Timber
Ortaklar	Stone masonry with timber and steel flooring	Stone masonry with timber and steel flooring	Timber
Germencik	This station was constructed in 1950's		
İncirliova	Stone masonry with timber flooring	Stone masonry with timber flooring	Timber
Aydın	This station was constructed in 1950's		

STRUCTURAL DEFORMATIONS – Station Buildings - Exterior

	Ground Level	1st Floor	Roof
Hilal	The station building was demolished during the metro construction.		
Kemer	No deformation No crack	No deformation No crack	No deformation
Şirinyer	No deformation Structural cracks	No deformation Structural cracks	No deformation
Gaziemir	Deformation Structural cracks		deformation
Adnan Menderes	This station was constructed in 1980’s		
Cumaovası	This station was constructed in 1950’s		
Develiköy	This station is closed		
Pancar			
Torbalı	Deformation Structural Cracks		No deformation
Tepeköy	This station was constructed in 1950’s		
Sağlık	This station is closed		
Selçuk	No deformation Structural cracks	No deformation Structural cracks	No deformation
Çamlık	No deformation Structural cracks	No deformation Structural cracks	No deformation
Ortaklar	No deformation Structural cracks	Deformation Structural cracks	
Germencik	This station was constructed in 1950’s		
İncirliova	No deformation No crack	No deformation No crack	No deformation
Aydın	This station was constructed in 1950’s		