



by Sahel al-Hiyari (2004) and Akram Abu Hamdan (2001)

Kadiköy Park Washrooms

Istanbul, Turkey



Architect

GA Architects: Gökhan Avcioğlu

Client

*Kadiköy Municipality
Selahattin Teke*

Design

1994 - 1995

Completed

1996

Kadiköy Park Washrooms

Istanbul, Turkey

This report is based on the On-Site Review report prepared by Mr. Akram Abu Hamdan for the 2001 Aga Khan Award cycle. It elaborates upon and updates the information he provided.

I. Introduction

The project is an underground washroom facility at Kadiköy Park in a residential suburb in the Asian part of Istanbul. Its unobtrusive structure nestles within the natural setting of a park, surrounded by a busy, almost chaotic urban environment. The project shows great respect for both people and the environment. It has set an example of very high standards for the most overlooked and disregarded of urban programmes. The building was realized through the initiative of the architect, the operator and Kadiköy local authorities

II. Contextual Information

A. Historical background

Kadiköy, formerly known as Chalcedon ('land of copper'), has its roots in ancient history. The earliest settlement, dating from around 4000–3000 BC, was in Fikiritepe, in the north of present-day Kadiköy. The city, some distance from the centre of Istanbul, lies at the intersection of the Bosphorus and the Sea of Marmara and enjoys a natural harbour, used as a port since ancient times. The natural and strategic location of Kadiköy provided an excellent setting for many civilizations such as the Phoenicians, Greeks, Persians and Romans, and then became a major strategic and commercial Byzantine centre.

After the conquest of Constantinople in 1453, the Ottoman emperor Fatih Sultan Mehmet appointed his first *qadi* (judge) to Chalcedon, prompting the new name, Kadiköy – 'village of the judge'. Throughout the Ottoman period, up to the proclamation of the Turkish Republic in 1923, Kadiköy, with its diverse cultural background, retained a major sociocultural and political status. However, by the end of the twentieth century, Kadiköy was famous only for its fish and flower markets. The history of Kadiköy Park is fairly recent, dating from the 1930s when it was created from landfill.

B. Local architectural character

An odd mixture of architectural styles, dating from different periods, characterizes the area around Kadiköy Park. Interesting old stone buildings, among them an eighteenth-century Ottoman mosque, stand side-by-side with more recent concrete and glass structures. The businesses around the park are mainly commercial and governmental, such as banks, shops, office buildings, post offices, tax authority buildings and, most prominently, the Town Hall. It is such functions that make the Kadiköy Park area a vital urban centre; the tone of the area is, to a certain extent, organized chaos. However, by virtue of its density and clear urban

definition, the clashing architectural styles and diverse scale of buildings are somehow reconciled and the prevailing quality is that of a balanced urban square.

Moving inland, beyond the area of the park itself, the character and scale of Kadiköy radically transforms into a dense residential fabric, with narrow roads mainly used as markets. Kadiköy Park forms the district's main urban square and a gateway that mediates between sea and land.

C. Climatic conditions

Istanbul and the area around the Sea of Marmara are subject to coastal climatic conditions, with strong prevailing winds from the sea during all seasons. Humidity varies between 40 and 70 per cent. Summers are generally hot and humid while winters are temperate and rainy. The city's climate is generally moderate, with average temperatures of 27°C in the summer and 4°C during the winter, when the temperature can fall below zero.

Climatic data for Istanbul:

Month	Minimum temperature	Maximum temperature
January	3°C	8°C
February	2°C	9°C
March	3°C	11°C
April	7°C	16°C
May	12°C	21°C
June	16°C	25°C
July	18°C	28°C
August	19°C	28°C
September	16°C	24°C
October	13°C	20°C
November	9°C	15°C
December	5°C	11°C

D. Site and surroundings

The project is located in the middle of Kadiköy Park. The park, an urban island surrounded by a network of busy roads, looks out to sea along its north-western side and to town along its eastern side. Kadiköy as it stands today is a bustling seaport. The main arteries connecting the Asiatic and European parts of Istanbul fan out from the square, which also accommodates Haydar Pasha Central Train Station, connecting Istanbul to Anatolia and the Middle East. The square itself is enhanced by a range of established deciduous and evergreen trees within the park setting. The quality of landscaping in the park is, however, somewhat crude and in need of upgrading.

Until recently, Kadiköy Park accommodated two main markets selling flowers and fish. These were moved to another location to reduce pedestrian congestion.

E. Topography

The site around the washroom facility is fairly flat. However, the subterranean nature of the project demanded major excavation work in the immediate vicinity, as well as the reshaping or excavation of land around the project's north-western entry ramp. As a result, the project cuts into the flat surface of the park and forms a linear incision where the ramp occurs.

III. Programme

A. What conditions gave rise to the formulation of the programme?

The previous public facilities in Kadiköy Park were built above ground and were in a generally poor, unsanitary condition. The fifty-year-old structure was owned by the municipal authorities, which did not have sufficient funds to replace it. Selahattin Teke, the sanitary contractor responsible for the maintenance of the old washroom facilities, put forward a proposal whereby he personally would fund a new public facility with returns generated from an entrance fee, to which he would have rights for twenty-five years. The Kadiköy local authority approved his scheme.

Selahattin Teke approached the architect Gökhan Avcioğlu, who agreed to design the building on the basis that the intention of the project was to provide facilities of a high standard. The architect put forward a design that conformed with local regulations, which stated that all new washroom facilities should be subterranean structures with a maximum projection of 1.5 metres above ground. Realizing the potential of the park, the architect also lobbied the Town Hall to relandscape the whole site. Preliminary landscape designs were submitted for approval along with the washroom design. The landscape proposal was favourably received but was never implemented. Following the final approval of the washroom design, the operator, Selahattin Teke, demolished the old facilities and took responsibility for the new project's construction, under the architect's supervision.

B. Objectives

Kadiköy's Park's need for new public washrooms eventually met with a positive response from the municipal authorities once the financial issues had been resolved with Selahattin Teke. This opened up the possibility of redeveloping the park so that the new project would exist within the context of an integrated urban landscape but this larger scheme has not advanced.

The architect's design objective was to provide 'a place of purification', following the historic paradigms of public baths, which not only provided a refined architectural setting for the rituals taking place within, but also made such rituals social occasions. The Kadiköy washroom project stems from such age-old traditions and seeks to reinstate and reinforce them. The primary goal of the project was to 'convert a trivial urban passage into a place of uplifting memories', which would only be possible by devising a rich experiential architectural proposal.

The more practical objectives of the project were to provide a durable, low-maintenance structure that would resist damage resulting from heavy use and vandalism. The project was in fact intended to be a model, applicable to other areas of Istanbul as well as other heavily populated cities in Anatolia.

C. Functional requirements

The brief called for the provision of a washroom building to be used by the general public within an open urban park. The facility was required to function efficiently and hygienically, with minimal interference with and physical impact upon the site. The floor area and number of units of the old facility were used as the minimum goal for the new project. It was agreed that additional lavatory cubicles should be included to ensure the efficiency of the new facility in regard to the number of people using it on a daily basis.

IV. Description

A. Project data

The project is a single-storey underground building with a total area of 225 square metres. The main mass of the building is entirely underground while the roof, or inverted dome, which has a diameter of 9 metres, protrudes only 1.1 metres above ground level. The submerged structure of the roof is 9.4 metres wide and 11.6 metres long. On the south-eastern side, sheltering the women's entrance, a small lightweight steel-and-glass structure projects over the basic mass to a height of 2.5 metres above the ground. The covered area of the building occupies about 4 per cent of the 5,500-square-metre site. Outdoor areas servicing and leading down to the building occupy an additional 46 square metres.

The underground spaces of the facility consist of two parts, for male and female users respectively. Each section provides lavatories and a proportionate number of washbasins, with urinals in the men's section. The facility has two separate entrances located on the opposite sides of the main underground structure: a covered staircase to the east for women and, to the west, two external staircases for men and a central ramp for wheelchair users. Other underground services include a separate lavatory for disabled people, storage, a room for mechanical equipment, an area for the water tank and a staffed kiosk for entry control.

The design of the building is inspired by early Ottoman *hammams* (public bathhouses) which were typically designed as cubic or rectangular masses, the central space being crowned by a main dome. The secondary spaces of such typologies were also covered by smaller lateral domes surrounding the main central area. This type of massing was a direct reflection of the spatial organization of the building, which traditionally consisted of a series of large double-height halls surrounded by smaller spaces, to provide rooms of various temperatures for the users. The function of these buildings cannot be understood separately from their spatial organization; their image, structure and overall area form an inseparable unity.

The domes of *hammams* were usually pierced with small round openings that filtered beams of light into the interior spaces, to dramatic effect. However, many other Ottoman buildings –

particularly mosques – were designed as centralized schemes with domes articulated by a series of windows at their bases, forming a continuous ring of light around the central area below.

For the Kadiköy washroom facility, the architect chose to transform the historic dome by inverting it and placing it over the cubic structure protruding from the ground. This concave circular roof forms the most striking feature of the project and is externally perceived as a large planter. The inverted dome is elevated above the subterranean structure, the space between being filled with a ring of frosted-glass panels that filter light into the space below. However, from within the various submerged parts of the facilities, this roof is never seen as a whole, since the subterranean organization is by contrast, decentralized and asymmetrically divided. In addition, the columns that support the roof seem to emerge sporadically from the dividing wall without any obvious pattern, rendering the interior of the roof an ambiguous domain with no clear formal logic.

As well as its architectural heritage, the design draws upon the spirit of Anatolian mythology for inspiration. In this tradition, grottoes are associated with water and lunar goddesses, with nymphs, prophecy and birth, and with the passage through subterranean realms of rebirth. These realms suggest invisible, but often audible, forces – flowing underground waterways that suddenly bubble up into springs: concealed yet marked presences. The architect interpreted these ideas with a hidden container – a box highly charged with visual experiences that are only hinted at by the suddenly emerging and intriguing inverted dome. Within this modern grotto, the obscurity of the underworld is celebrated, with dark surfaces, dramatic lighting and ambiguous spaces that contrast with the mundane world.

B. Evolution of design concepts

1. Response to physical constraints

The only significant constraint was to keep the building below ground level. Regulations stipulated that the building could protrude above ground by only 1.1 metres, although covered entrances and ventilation shafts were permitted to exceed this limit.

Another constraint was to orientate the building towards the prevailing wind, in order to ensure cross-ventilation and airflow within the underground structure. Patterns of pedestrian flow and the location of the Town Hall were also taken into consideration for the precise site of the building.

2. Purely formal aspects

Being mostly submerged below ground level, the project makes an unobtrusive and restrained impact on the location in both visual and physical terms. The facility does not compromise the continuity of the urban park, nor does it impose an excessively formal presence. However, the north-western façade (the men's entrance), which is the only visible elevation of the project, is designed as a very clear symmetrical front, celebrated by a ceremonial approach that is emphasized by the long access ramp and side stairs. Only at that particular point does the project make a significant impact, the impression oscillating between an ancient temple and a bomb shelter. In contrast, the south-eastern part, where the women's entrance is located, is quite understated, although the glass box housing the entrance projects above ground. It

seems that the external composition was designed in a precise direction and with a specific hierarchy, moving from the ramp to the façade and finally dematerializing with the glass cube.

Despite the diagrammatic clarity of the building, the physical attributes of the project are quite complex. Its formal complexities stem from the manner in which inherent contrasts between programme, architectural precedents and general design intentions are fused into one entity. Although the programme does not necessarily call for symmetrical or centralized solutions, the architect nevertheless made a conscious effort to contain all functions within an almost predetermined form. The insistence on defining an idealized type for such a scheme is especially clear in the development of ideas, from early sketches to the final design. It is quite apparent that the architect tailored the programme to achieve a clear idea of the building's volume and image, which probably explains the directionality and hierarchy of the composition's elements.

What seems to be most vital in this project is the radical aestheticization of one of the most utilitarian urban areas in the city, which has been transformed into an isolated self-referential design event.

3. *Landscaping*

The intention was to use landscaping as an integral part of the project. The most prominent element protruding above ground, the roof, was dealt with as a landscape feature or large planter that was to accommodate a bamboo garden. A lily pond, located directly above the men's entrance, was also incorporated into the planter. Although neither the bamboo garden nor the lily pond was maintained, the general effect of a continuous green covering prevails in the current presentation of the project. Another important element of the composition is the long entry ramp which was designed to use the minimum amount of concrete or man-made materials. In fact, the triangular sides of the ramp were treated as sloping planted mounds, while the sides of the concrete pathway were lined with bands of rocks.

The landscaping of the project fundamentally integrates it into the park, minimizing the use of man-made elements so as to maintain the natural qualities of the site.

C. *Structure, materials, technology*

1. *Structural systems*

Inspired by World War I bomb shelters from Gallipoli, the structure utilized 24 tons of steel and 20 cubic metres of concrete as a means of ensuring strength and durability. Below ground, a square box-like structure was made of reinforced-concrete retaining walls and floor slabs, the walls being double layered and tanked with damp-proof membrane between the layers. The internal partitions of the embedded square are also made of reinforced concrete. Columns extend at certain points and at irregular intervals to support the shell-like concrete roof. The shape of the roof was influenced by the wide structural span, lateral loading requirements and the varying qualities of daylight. The edges of the roof are cantilevered from the various points of support so that its circular form appears to float above the ground and the subterranean space.

Structural contrasts are at play in the building. The underground part is of a rigid and heavy bomb-shelter form while the floating planted roof and glass entrance gives a strong sense of lightness.

2. *Materials*

Concrete, stainless steel, African granite and laminated glass were chosen as the materials in the interests of hygiene, resistance to vandalism and durability. As with all urban public conveniences, vandalism was a major concern for the owners and architect. It is typically worst in male lavatories. Whereas concrete walls will bear the scars of vandalism, materials such as stainless steel are more resilient. The general finishing of the facility attempts to redefine the norms usually followed in the design of such urban facilities. Perhaps the issues of hygiene and resilience were indeed determining factors. However, the choice of materials and their treatment had more to do with the look and feel of the interior spaces than with functional performance. This becomes apparent when one observes that special anti-damp sealant was used only on certain parts of the concrete, while other parts were left untreated. The treated areas have a glossy, darker finish while the untreated areas are lighter in colour and non-reflective. Oguz Cankan, one of the architects on the design team, explained that such a feature was an attempt to compose a pattern of different concrete treatments that addressed the areas subjected to greater water exposure. The pattern, however, goes beyond simply being an indicator of wet areas by extending throughout the spaces into areas that need no protection.

The close attention to detail exhibited by the project team led to some innovative solutions during both the design development and the construction phases. One example is the placing of white pebble bands along the edges of the interior walls to resolve the transition between the black granite floors and concrete walls. This solution, although not necessarily ideal in hygienic terms, aesthetically resolves the meeting point between the two materials, avoiding the treatment of the joint in a standard manner.

3. *Construction technology*

The structure that caps the building – the ‘levitating’ dome and glass ring – directly contrasts with the heavy concrete that makes up the main body of the facility, both in visual and technical terms. This contrast necessitated a construction combination of *in-situ* casting of the subterranean area and manual assembly of standard components above ground. The construction technology used is standard building practice in Turkey. However, the quality of construction – especially with regard to the concrete work – is remarkably high, given the fact that good results in light-coloured concrete are generally not easily obtained.

D. *Origins of technology, materials, labour force, professionals*

1. *Technology and materials*

With stainless-steel surfaces, WC cabinets, sanitary fittings in porcelain and stainless steel, the fixtures and various accessories were typical ‘high-tech’ components, some of which were imported while others were locally made.

2. *Labour force*

The construction team for the project was local.

3. *Professionals*

The architect, his in-house team and the various project engineers were from Istanbul. The construction was carried out by the operator and supervised and managed by the architect, who was also in charge of tendering various elements of the project to subcontractors, including door manufacturers, glaziers, specialists in concrete casting, plumbers and electricians.

V. **Construction Schedule and Costs**

A. *History of project*

Work on the project was completed in 1996, within a total construction period of one year. The timetable for realizing the project was as follows:

Commission	1994
Design	August 1994–January 1995
Construction	January 1995–January 1996
Occupancy	1996

B. **Maintenance and running costs**

An average of 400 people use the facility each day. At weekends, the number increases to an average of 700. Consequently, this heavily used project demands regular maintenance and upkeep. The cost of maintenance per year is an average of USD 5,000. As for running costs, the building requires an average of USD 10,000 per year, which includes cleaning costs and the miscellaneous items needed by users, such as soap, toilet paper, paper towels and so on. The usage fee of the facility is the equivalent of USD 0.6 (60 cents) per person, while other public facilities cost USD 0.4 (forty cents).

VI. **Technical Assessment**

A. *Functional assessment*

The practical and functional requirements of the facility have been successfully addressed and the project is generally well suited to the site. Although the project is mostly subterranean, passers-by can easily identify it. Adequate signage, located on the projecting glass cube above the women's entrance, clearly indicates the washroom. At night the glass cube and the glazed ring around the roof are illuminated to mark out the facility.

The functional and spatial organization of the design is well resolved and therefore well controlled. An entry kiosk, centrally located within the plan, allows visual contact with and control of both the male and female sections, maintaining a connection between both points of entry in case of fire or any other incident. The plan of the facility is divided into two sections

on either side of the central access points, each of which efficiently provides spacious accommodation for various programme components (washbasins, cubicles and so on). The service areas, the mechanical room, storage space and water tank are located in separate rooms by the entrance to the men's facilities, while the waste-water reservoir and pumps are located in a narrow rectangular space below the stairs of the women's entrance. Waste and above-surface drainage are both assisted by special pumps.

B. Climatic performance

Although the facility is constantly open to the outdoor environment, its subterranean nature and dense structure provide effective insulation to protect users from extreme temperatures. Having only two openings or entrances, moderate temperatures are maintained during all seasons, as well as a constant flow of fresh air. Ventilation, however, is mechanically enhanced; an air-return system ensures efficient drawing-down of fresh air from the outside, while air is mechanically expelled from the building through a shaft that extends 4 metres above the ground. With the additional contribution of effective maintenance and cleaning, the quality of the air in the building is far better than in any other public toilet conveniences in the city.

C. Choice of materials

The choice of materials has been instrumental in setting the project apart from its counterparts. Concrete, which is the predominant material here, is seldom used in facilities of a similar nature. Perhaps the non-absorbent surface of ceramic tiles is usually preferred for cleaning purposes but concrete functions just as well in this respect, providing it is properly sealed. On the other hand, stainless-steel surfaces, which feature heavily in the washbasins, doors and partitions, need constant cleaning and wiping since the material gives a rougher finish than porcelain and marks more easily. The black granite floor is very durable and aesthetically pleasing, although its polished surface has been slightly dulled by the high use of the facility.

D. Ageing and maintenance

Despite the heavy use, the elements of the building that are directly handled by the public have resisted damage. Vandalism remains the greatest concern, although even after eight years of constant use, the building has suffered little damage except for the deterioration of the satin-effect stainless steel cubicle doors and partitions. Some doors have been replaced because of irreparable damage, but this is a normal occurrence for buildings with this type of continual use. As for the concrete, which is the dominant material, its absorbent surface needs to be treated periodically against humidity and exposure to water. The glass used for the women's entrance and skylight located below the roof (ring of glass below the dome) is perhaps the material that needs most maintenance. The glass panels that frame the entrance are laminated to stainless steel profiles but they have a tendency to become detached from the profiles at various points. The glazing of the skylight demands constant cleaning, which is relatively difficult to perform, particularly on the interior areas.

E. Design features

The visible features of the project are not necessarily those that characterize the building conceptually and structurally. Above ground, the facility appears as a large circular planter hovering above a ring of glass, with a protruding glass box bearing signage. A steel chimney-like ventilation shaft, projecting 4 metres above ground, marks the location of the washroom. Below ground, the facility assumes a totally different and diverse nature. A series of interlocking rooms, expanded and segmented by large mirrors that amplify the labyrinthine qualities of the spaces, visually uproot the users from familiar associations and preconceptions of what a public toilet facility should resemble.

VII. Users

A. User profile

The facility is open to the general public, to people of all ages. It caters for the intense pedestrian traffic coming from the Kadıköy ferryboat, railway station and market place. Daily opening hours are from 7h00 to 23h00.

B. User response

In general, the project has been well received by the public: clean, efficient and, at times, strange, is how most users perceive it. This general consensus is confirmed by the fact that the facility is heavily used. Nevertheless, it took a few months for the public to use the washrooms after their completion. Perhaps such a delayed engagement with the building was due to the diversity of its design elements and its unfamiliarity. In fact, the project was thought to be an entertainment venue (a bar or nightclub) during its construction.

VIII. Project personnel

Client and operator: Selahattin Teke

Architect: Gökhan Avcioğlu, and design team Hüseyin Önder, Yalım Gülercan, Aslı Şener and Oğuz Cankan

Landscape architect: Dilek Ayman Rodrigue

Structural engineer: Celal Erdem

Mechanical engineer: Mehmet Sezeral

Electrical engineer: Süleyman Akım

The project was executed by Celal Erdem under the supervision and management of Gökhan Avcioğlu Architects

Concrete work: Vahit Kalfa

Substructure / sanitaryware installation: CESBA / Geberit

Stainless-steel work: Rafat Usta

Finishing: Zeki Babur
Glasswork: Alaadin Bey
Landscaping: Kadiköy local authority team

Sahel Al-Hiyari
May 2004

Underground Washrooms at Kadiköy Park

Istanbul, Turkey – 2001 report by Akram Abu Hamdan (May 2001)

I. Introduction

The underground washroom unit at Kadiköy Park is a remarkable urban space, which respects both people and the environment. The unobtrusive structure is nestled in its own natural setting within a busy and diverse urban environment. The building is a rare example of activist architecture that was realized through the initiative of the architect, the operator and Kadiköy Municipality.

II. Contextual Information

a. Historical background

Kadiköy, formerly known as Halkedon (land of copper) has been a major settlement since ancient times. Its natural port has embraced many civilizations. The earliest settlement, dating from around 4000–3000 BC, was at Fikirtepe, north of Kadiköy. Phoenicians, Greeks, Persians, Romans and later the Byzantines used Kadiköy as a major centre for commercial and strategic purposes.

After the conquest of Constantinople in 1453, the Ottoman emperor Fatih Sultan Mehmet appointed his first *kadi* (Arabic for judge) to Halkedon, prompting the new name, Kadiköy (village of the judge). Throughout the Ottoman period up to the proclamation of the Turkish Republic in 1923, Kadiköy, with its diverse cultural background, retained major socio-cultural and political status. Since the early 1900s it has been renowned as a fish and flower market.

b. Local architectural character

The area around Kadiköy Park features a mixture of architectural styles: interesting old stone buildings, including a mosque, exist side by side with less attractive modern concrete structures. The older buildings are distinguished from their contemporary neighbours, not only because they are better architectural expressions, but also because they are more sensitive to the environment. The old municipality building is perhaps the most prominent landmark in the area. Established trees help to create a natural environment, enhancing the urban square.

c. Climatic conditions

Istanbul and the area around the Sea of Marmara are subject to coastal climatic conditions, with strong prevailing winds from the sea in all seasons. Humidity varies from 40% to 70%. Summers are generally hot and humid, while winters are temperate and rainy. The city's climate is generally moderate with average temperatures of 27°C in the summer and 4°C in winter, when the temperature can drop to below zero.

<u>Climatic data for Istanbul</u>												
Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	
Maximum temperature (°C)												
8	9	11	16	21	25	28	28	24	20	15	11	
Minimum temperature (°C)												
3	2	3	7	12	16	18	19	16	13	9	5	

d. Site

The project is located in the middle of Kadiköy Park, in the Asian part of Istanbul. The park, an urban island surrounded by busy roads, looks out to the sea along its north-western front and to the town along its eastern front. The park forms the district's main urban square. Kadiköy as it stands today is a bustling seaport. The main road arteries connecting the Asiatic and European sides of Istanbul fan out from its square, which also accommodates Haydarpasha Central train station, connecting Istanbul to Anatolia and the Middle East. The square itself is enhanced by a range of established deciduous and evergreen trees within the park setting. The level of landscaping and other facilities in the park is, however, somewhat crude and in need of upgrading.

e. Site topography

The site around the washroom unit is fairly flat. However, due to the subterranean nature of the project, an area had to be excavated to accommodate the building and the approaches leading down from two opposite directions.

III. Programme

a. What conditions gave rise to the formulation of the programme?

The previous public conveniences for Kadiköy Park were built above ground and were generally in poor condition and unhygienic. The old structure was unsuitable both in visual and functional terms. Kadiköy Municipality, owner of the old public washrooms, was interested in upgrading the facilities but did not have sufficient funds. Selahattin Teke, a private operator, approached the municipality with a proposal to fund a new facility with returns generated from charging an entrance fee, based on acquisition of the site for twenty-five years.

The operator also approached Gökhan Avcioglu Architects (GA Architects), who in turn agreed to design the building, free of charge, provided it was built to a high standard. The architects proposed that the new conveniences should be underground (below sea level), and create the minimum of interference above ground. Realizing the potential of the park, the architects also lobbied the municipality for the relandscaping of the whole site. Preliminary

landscape designs were submitted along with the washroom designs for approval. The new landscape proposal was favourably received by the municipality but was never implemented. Following final approval of the designs of the washroom facility, the operator demolished the old washroom facility and commissioned the architects to manage the construction of the new one.

b. Objectives

Kadiköy Park's need for new public conveniences eventually met with a positive response from the municipality, once financial issues had been resolved with the new operator. This opened an opportunity for considering the redevelopment of the park, where the new conveniences would exist within the context of an integrated urban landscape.

The architect's design objectives were for a 'place of purification'. Since ancient times public baths have been generators of social activity within city culture. The Kadiköy Park project, with its underground washrooms, stems from this tradition and seeks to reinforce it. The architect expressed his hopes thus: 'Our primary goal for this project is to convert a trivial urban passage into a place of uplifting memories.'

c. Functional requirements

The brief called for the provision of a washroom facility for use by the general public within an open urban park. The facility was required to function efficiently and hygienically with minimum interference and physical impact on the site.

IV. Description

a. Project data

The project is a one-storey underground building with a total covered area of 225 square metres. The main mass of the building protrudes only 1.1 metres above ground level. On the south-east side, covering the women's entrance, a small, lightweight steel and glass structure projects over the basic mass to a height of 2.5 metres above ground level.

The covered area of the building occupies 4 per cent of the 5,500-square-metre site. Outdoor areas servicing the building and leading down to it occupy an additional 46 square metres.

The underground facility has two parts, for male and female users respectively. Each section provides toilets and a proportionate number of washbasins, with urinals in the male section. The unit has two entrances: a covered staircase to the east for women; and, to the west, two external staircases for men and a ramp for wheelchair users. Other underground accommodation includes a separate toilet for disabled people, storage, mechanical services, a water tank and a staffed kiosk for entry control.

b. *Evolution of design concepts*

The architect's design approach was inspired by early Ottoman *hammams* (public baths), which were typically cube-shaped buildings crowned by a dome. The architect chose to transform this feature, inverting the dome over a cubic space gorged out of the ground, to create a concave circular roof.

In Anatolian mythology, grottoes are associated with water and lunar goddesses, with nymphs, prophecy, birth and passage through the subterranean realms of rebirth. These themes suggest invisible but often audible forces – flowing subterranean water with suddenly appearing springs. The designer interpreted these ideas in this modern grotto by surrounding the concrete soffit of the inverted dome where it rises above ground level with a curtain of opaque glass, suggesting the concealment of 'hidden secrets' beyond.

c. *Structure, materials, technology*

The shape of the roof structure was influenced by the long structural span, lateral loading requirements, the height of the ceiling, lighting requirements and daylight angles. A reinforced-concrete shell-like structure, the roof is supported by reinforced-concrete walls and serves as a deep basin for the planting of a bamboo garden above ground. The edges of the roof are cantilevered from the various points of support, so that its circular form appears to float above the ground. Below ground the peripheral structure is a rectangular box, made up of reinforced-concrete retaining walls and floor-slab, which are tanked with a damp-proof membrane between double layers of wall.

Structural contrasts are at play in the building. The underground part is of rigid and heavy concrete construction, reminiscent of the air-raid shelters built in Gallipoli during World War II, while above ground are transparent elements inspired by Dan Graham's 1989 installation entitled *A Two-Way Mirror*.

Hardy and sterile materials – concrete, stainless steel, African granite and laminated glass – were chosen in the interests of hygiene, resistance to vandalism and durability. As with all urban public facilities, vandalism was a major concern for the owners and architects. It is typically at its worst in male washrooms. Whereas concrete walls will bear the scars of vandalism, materials such as stainless steel are more resilient.

An obvious attention to detail on behalf of the project team led to some innovative solutions during both the design development and execution phases of the project. One example is the placing of a strip of white pebbles along the edges of the walls to solve the transition between black granite flooring and varnished concrete walls. Such attention to detail was based not only on aesthetics but also on practical sanitary considerations.

The design team obviously reconsidered the conventional building methods and systems associated with this type of facility throughout the building process. Specific site instructions supported by intricate structural details governed the development of each aspect of construction.

d. *Origins of technology, labour force, materials*

The light structure that caps the building is in direct contrast with the heavy fair-faced concrete that makes up the main body of the washrooms. This necessitated a construction combination of *in situ* casting of the subterranean section and light assembly of standard components above ground.

Stainless steel doors, WC cabins, sanitary fittings in porcelain and stainless steel, and various accessories are customary 'hi-tech' components, some of which were imported, while others were locally manufactured.

Part of the project management service provided by the architect was the tendering of various elements of the project to subcontractors (in other words craftsmen), including door makers, glaziers, concrete casters, plumbers and electricians.

V. **Construction Schedule and Costs**

a. *History of project, with dates*

Work on the project was completed in January 1996, within a total construction time of one year. The timetable for realizing the project was as follows:

Commission:	1994
Design:	August 1994–January 1995
Construction:	January 1995–January 1996
Occupancy:	1996

b. *Total costs and main sources of financing*

The total cost of the project is USD 120,150. This figure does not include the cost of land, which was provided by the Kadiköy Municipality. The project was entirely financed by a local entrepreneur, Selahattin Teke, who is also the operator. By prior arrangement, Mr Teke will have use of the land for twenty-five years and share with the municipality net revenues generated by charging an entrance fee to the conveniences (approximately USD 0.20 per user).

c. *Qualitative analysis of costs*

The average cost per square metre of floor area is USD 534.

Actual costs for the various disciplines, as provided by the architect, are broken down as follows:

Infrastructure:	USD 30,150.
Construction:	USD 50,625.
Fitting and interior:	USD 31,950.
Landscaping:	USD 7,425.
Professional fees:	Free of charge.

VI. Technical Assessment

a. Functional assessment

In practical terms, the building is well suited to its site. It is easily identifiable by passers-by, despite the fact that it is underground. Signs indicating the entrances are placed on the glass structure projecting over the female section. When lit, the glazed ring around the roof also serves to identify the building.

The layout of the facility, within the confinement of an underground bunker, is well planned and therefore well controlled. The placement of the entry kiosk in the middle, with visual access to both entry points, is practical and cuts down on staff allocation.

The designer has also dealt with the services aspect of the building in a rational and subtle way. The main water supply passes through a cold-water tank located unobtrusively underground. Waste and surface drainage is at both ground and underground levels, assisted by special pumps.

b. Climatic performance

The underground washrooms are placed under a concrete saucer covered by a garden of bamboo (*saz* in Turkish) and pebbles. The concave roof admits ample daylight around its periphery to both male and female facilities. At night, light radiating from the inside of the building forms a glimmering circle within the surrounding garden. This arrangement creates an interplay of light between the indoor and outdoor spaces.

Because of the open nature of the facility, the building is not heated. However, because it is an underground structure, it is sheltered from the cold wind and is therefore not particularly cold in winter. In summer, this helps to keep the space cool.

A ventilation system assures proper air exchange with fresh air from the outside. Air is exhausted mechanically from the building and expelled 4 metres above ground level.

c. Ageing and maintenance

Despite heavy use of the building, the elements exposed to handling by the public are quite hardy and resilient. Vandalism remains the biggest concern. However, even after five years of intense use the building has suffered little damage, except for some deterioration of the satin finish on the stainless steel cabins.

d. Design features

The features that are apparent to the public eye are not necessarily those that characterize the building conceptually and structurally. Above ground the facility appears as a glazed ring with a protruding glass box bearing the project signage. A steel chimney-like ventilation shaft, projecting to a height of 4 metres above ground, marks the site of the facility. A longitudinal lily pond over the entrance to the male section reinforces the linear direction of the ramp within the dynamic composition of the building above ground.

e. Impact of the project on the site

The project's graphic imposition on the existing landscape is provocative, albeit for good reason. The small yet important urban park has good potential for relandscaping. However, the decision to set the building underground has benefited the site, allowing green planting to continue over the building.

The present operator will run the project for a period of twenty-five years, after which it will return to the hands of the Kadiköy Municipality. Regular maintenance of the washroom is essential for its proper upkeep, functionality and image. Here, the decision to enforce an entrance fee on users guarantees a return that allows the facility to cover the required overhead expenses and operational costs.

The general theme adopted in the choice of fittings and accessories is in keeping with the dynamic and hygienic image of the project. Easily cleaned surfaces, non-absorbent materials and the assembly of components in a clear and simple manner, are homogeneous with the architecture.

VII. Users

a. User profile

The facility is open to the general public of all ages. It caters for the intense pedestrian traffic between Kadiköy ferry-boat station and the market place, from the early morning hours until late in the evening.

b. User response

Five years after its completion the facility is still not perceived by the general public as an integral part of the public park. This is possibly because the building cuts across the park along its east-west axis and is located next to the main pathway through the park. Physically, the building needs to be better integrated within the general composition of the park, hence the architect's suggestions that the existing landscape of the site should be reviewed. On another note, the project has taken on an alternative role within the local urban community. During the day, the lily pond, which collects rainwater, is used for irrigation by flower sellers around the park. The bamboo garden formed by the roof is used as an alternative playground,

a 'hide-and-seek' place for children playing in the park during the day, while at night it shelters the homeless.

VIII. Project Personnel

In addition to Mr Gökhan Avcioglu, the design team included architects Hüseyin Önder, Yalim Gülercan, Asli Sener and Oguz Cankan.

Consultants included landscape architect Dilek Ayman Rodrigue, structural engineer Celal Erdem, mechanical engineer Mehmet Sezeral and electrical engineer Süleyman Akim.

There was no main contractor on the project. The architect's office carried out project management services during construction and, with the help of the project sponsor, Selahattin Teke, various subcontractors were appointed to carry out the work. These were as follows:

Vahit Kalfa: concrete.

CEBSA/Geberit: substructure/sanitary installation.

Rafet Usta: stainless steel.

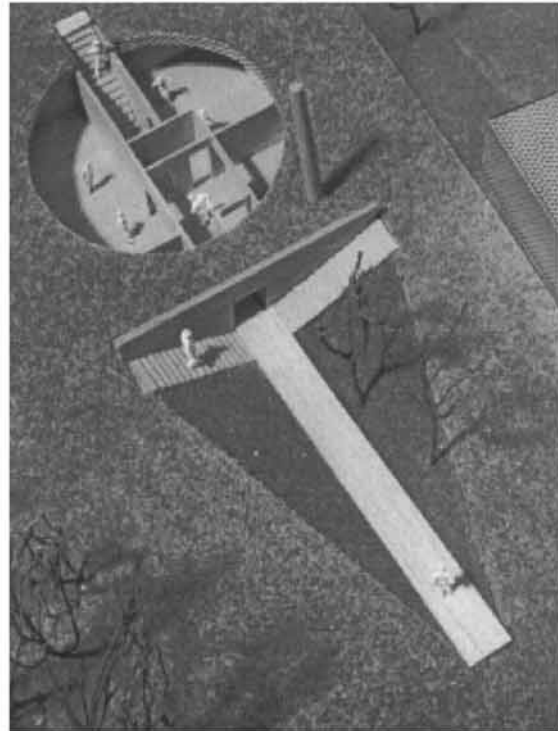
Zeki Babur: finishing.

Alaaddin Bey: glass.

Kadiköy Municipality Team: landscaping.

Akram Abu Hamdan

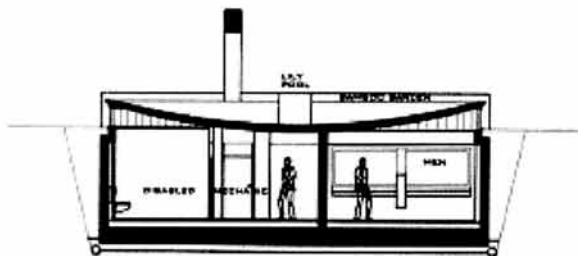
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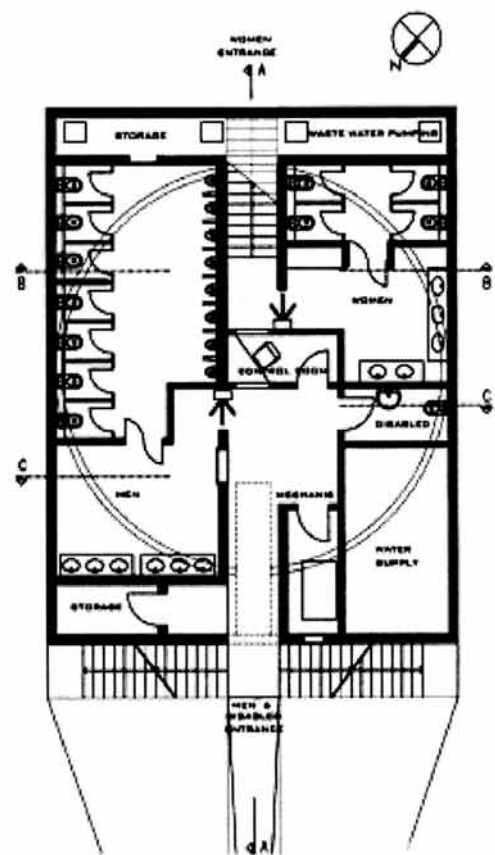
ISOMETRIC VIEW



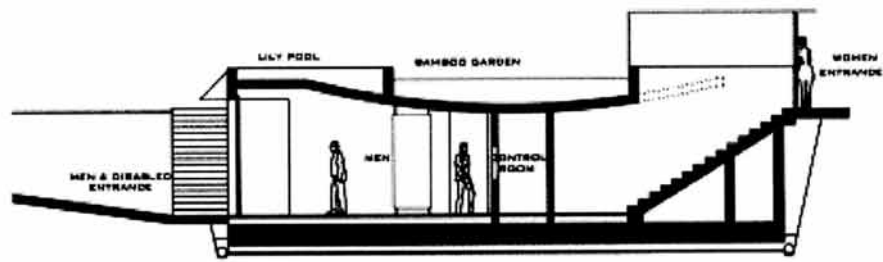
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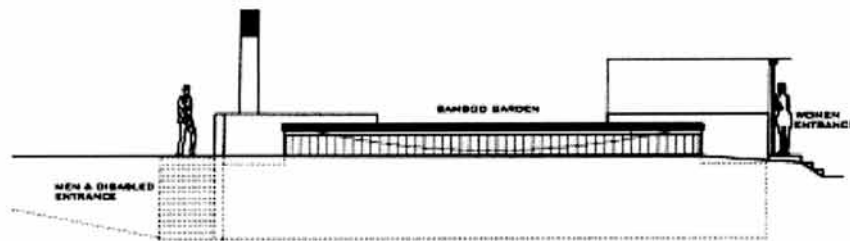
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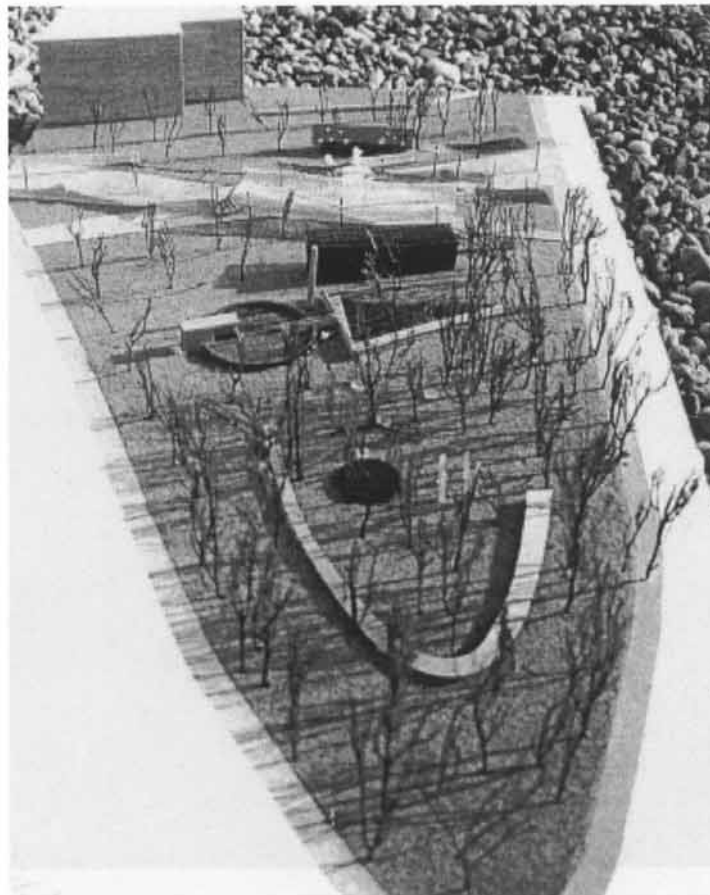
GROUND FLOOR PLAN



SECTION AA



SOUTH WEST ELEVATION



MODEL



General view of Kadiköy Park toward the Bosphorus and Sea of Marmara; the washroom facilities are located in the centre.

View of Kadiköy Park square; the top of the circular form of the underground washrooms rises from the lawn.





The circular structure containing the washroom facilities protrudes 1.1m above the ground and is surrounded by opaque glass allowing natural light to penetrate the interior.

At night, the light from the roof identifies the building and forms a glimmering circle within the surrounding garden.





Front elevation of the lightweight steel and glass structure enclosing the staircase to the women's washroom.

The entrance covers a staircase leading to the women's washroom on the southeast side.





The interior of the men’s washroom is detailed in stainless steel and granite floors. The structure is a concrete shell.



View down the stairwell leading to the women’s washroom.



A strip of white pebbles along the interior walls is placed as a transition between the black granite floor and varnished concrete walls.



Natural light from the roof filters into the washbasin area in the men's washroom.



The entrance down to the men’s washroom as seen from the main road also provides access for the handicapped.

Stairs leading down to the men’s washroom; submerging the facility allows for the landscaping of the roof.

