1992 Technical Review Summary
by *Romi Khosla*

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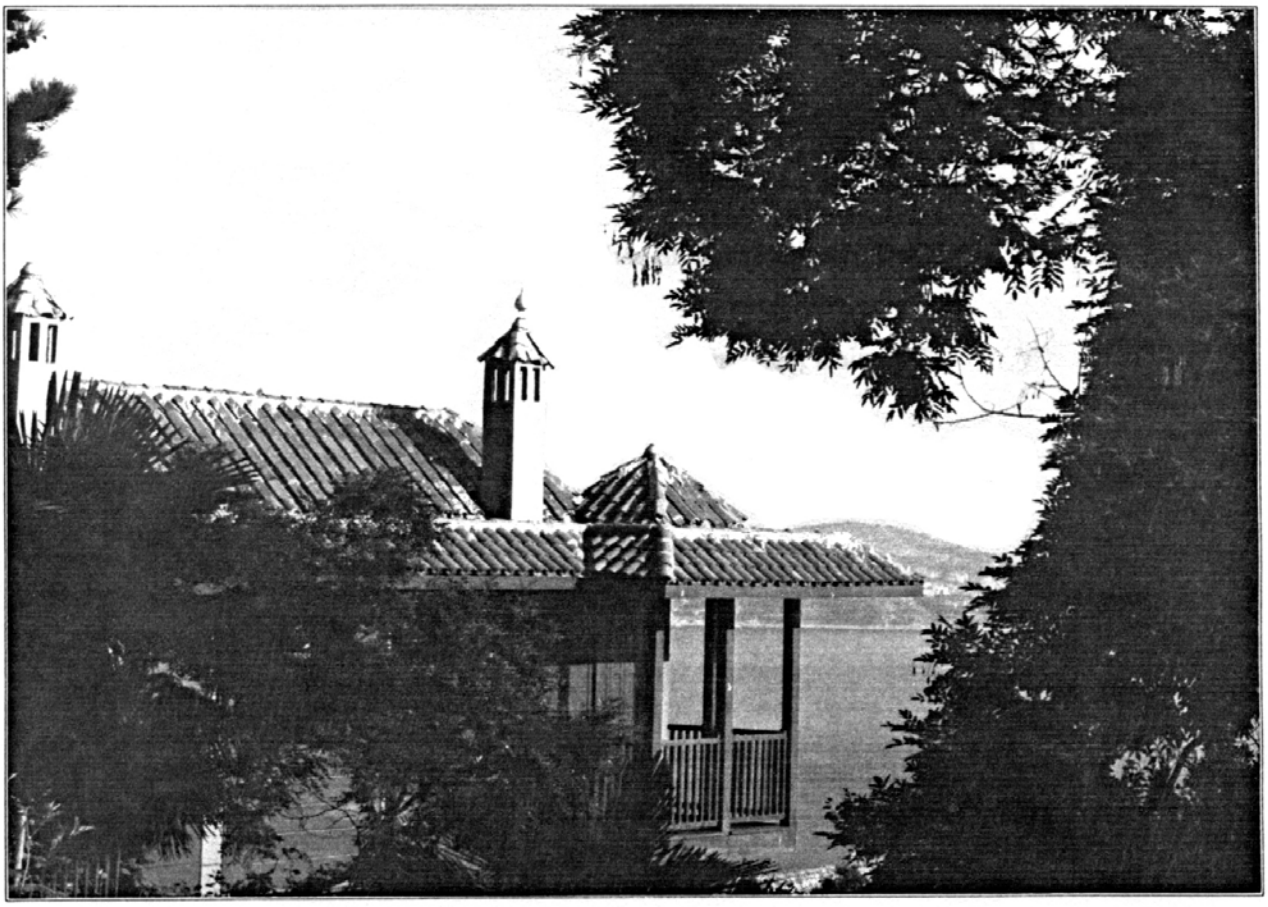
# Ataç House

Burgaz Island, Istanbul, Turkey



*Architect*

Turgut Cansever & Feyza Cansever
Istanbul, Turkey

*Client*

Rafet and Aysin Ataç
Istanbul, Turkey

*Completed*

September, 1986

*Aysin & Rafet Ataç House, Istanbul, Turkey*

## I. Introduction

The project is a three level, single-family house located on the rising slopes of one of the *Prince's Islands* situated across from Istanbul in the Sea of Marmara. It is the summer house of a corporate lawyer and his family who spend winter in Istanbul and summer in their house on the Island of Burgaz. The owners purchased the parcel of land, which measures almost 500 $m^2$, to build apartments as a commercial venture; however, when they engaged a sensitive architect and faced difficulties with municipal permissions, the project was finally realised as a summer residence. The house has a distinct architectural presence. The simplicity of its design, and its carefully detailed execution, make the house quite exceptional on the Island of Burgaz.

## II. Context

### a. *Historical Background*

The "Turkish House" is the subject of some significant architectural research studies. The major ground work for these studies was done by teams of architects and students under the guidance of Sedad Eldem in the 1930's. The incomplete publication of this research, which began in the 1950s, brought about a strong consciousness amongst many Turkish architects about the Ottoman house and its rapid disappearance from the urban landscape where timber was being replaced with brick and concrete. The limited material that Eldem published provides an extensive collection of Turkish house examples that have disappeared under re-development schemes in the twenty five years taken to publish the research. The Turkish House can be loosely described as a house type that had been built by the Turks after their migration and settlement in Anatolia. Its most distinct feature is its timber frame structure with infill walls and small vertical windows. Sedad Eldem's research as well as his writings placed great emphasis on tradition and cultural continuity in architecture, and the Turkish house began to be regarded as an archetype that symbolised the regional architectural identity of Anatolia. The Turkish house became a popular typology with some of his students. Turgut Cansever, the architect of the Ataç House, was a student of Eldem's as well as his teaching assistant and the distinct architectural expression of the Ataç House can certainly be connected to the research and ideas of Sedad Eldem.

### b. *Local Architectural Character*

The Ataç house is built on Burgaz Island which is one of the six islands situated in the Sea of Marmara between the Asiatic coast and Istanbul, some 20 km south-east of the city. It is the third largest island in the group with a land area of 1.5 square kilometres. The hilltop in the centre of the island has an altitude of 170m with pine covered slopes that descend to the sea. The house is built across these slopes. The islands known variously as *Red Islands* and *Prince's Islands* have an ancient history which dates to pre-Byzantine times. In Byzantine times the islands were used to intern royal persons who were inconvenient for the rulers. Under Ottoman rule the islands were used to mine copper, for the isolation of stray dogs and for rabbit breeding. In the nineteenth Century, however, the Ottoman Empire's business community of Greeks, Jews and Armenians began to use these islands as an escape from the difficult climate of Istanbul. The population was predominantly Greek and many of the white Victorian timber mansions and villas that dot these islands were built during the late 19th Century. Although many architects refer to the style of these older mansions as *art nouveau*, they have more of an eclectic mixture of styles and forms. They are normally built of timber and decorated with carvings which frame the balconies and bay windows. The 19th Century aristocratic residences on the Bosphorus, known locally as *Yali*, were much more elaborate in scale and size. The island houses of the same period are much smaller in size as they are used only as summer residences. The idea of using the islands for summer residences has persisted till today. The islands have a small permanent population that runs the services and shops. Nearly all of the villas are closed in winter.

Significant changes in the local architectural character of these islands have come about in the last two decades. Photographs of the site and its vicinity taken in the 1970's show a setting with a few elegant villas set amongst the pine and cypress trees. Today, the timber frame houses of the 19th Century are gradually being replaced with concrete and hollow block apartments. There is significant increase in the volume and density of constructions. Very few of these more recent constructions have any architectural elegance. The Ataç House, constructed in 1986, stands out as an exceptional design.

### c. *Climatic Conditions*

The proximity of the sea as well as rainfall of 700 mm a year makes the climate of the Islands humid; however, they are much cooler than Istanbul in summer due to the extensive number of trees. The temperature in Istanbul rises from 3°C in January to 29°C in July. It is easy to understand why the islands have become an attractive retreat from the summer heat of Istanbul whose dense urban development contributes to the increase in temperature and adds discomfort.

### d. *Site and Surrounds*

The large plots of land that once surrounded the villas built in the late 19th and early 20th Centuries have steadily lost their orchards and grounds. The sub-division of these estates into small plots for development has considerably altered the built environment of the island. The 1.5 $km^2$ area of the island has been developed only on the northern side which faces Istanbul. Houses are sheltered from the prevailing southern wind which can be severe. The loose grid of tarmacadam roads - where motor vehicles are prohibited - gives access to plots and it may be assumed that further densification is planned. Access to the plot is from the road to the north. Further access is possible from the road to the south though this is mainly used as the service entrance.

### e. *Topography of the Project Site*

The vacant site was once a fruit garden; however, when it was acquired by the present present owner, there were only pine trees on the lower levels and some fruit trees on the upper levels. All of these trees were retained when the house was built. Originally, four terraces descended from the upper road level (19.5 m) down to the lower road level (9.6 m). Thus, the plot lay between two roads with a difference in level of 10 metres. The terraces were reformed with retaining walls to give the present flat, terraced topography of the site. On completion of the house, the levels of the surrounding area were re-modelled and paved. Differences in level are negotiated with steps. The upper area of the plot was retained as a fruit garden.

## III. Description

### a. *Formulation of the Programme*

In 1983, when the owner Rafet Ataç acquired the plot, he asked the architect to plan a large house for rental purposes with a smaller house as an annex for the use of the owner. In initial discussions with the island municipality, this proposal was rejected. The municipality permitted restricted ground coverage of 15% of the plot area. The architect then negotiated with the municipality to permit a three-level construction in which the lowest level was termed a basement. The form of the house as agreed with the municipality was a cube 10 x 10 x 10 m in dimension. The house would be designed within this volume with overhangs as permitted by local construction regulations. The constraints of the programme were thus determined by municipal bye-laws which fixed the volume of the construction as well as its location on the plot.

*b. General Objectives*

Once the "cube" had been fixed by the municipality, the broad objectives that to which the architect addressed were:

- A three-tier house where the lowest or basement level would be used as the guest floor;
- A middle or ground level as the sofa or living, eating, and cooking space for the family;
- An upper level as the bedroom space;
- A system of interlinked outdoor terraces to overlook the sea and Istanbul;
- An architectural style that evoked the "Turkish House" of Ottoman origin.

*c. Architect's Brief*

The architect is a close friend of the owner and the brief for the house evolved from discussions throughout a one year period. The perimeter of the house had been fixed by the municipality as a 10 x 10 $m^2$. It was agreed to keep the lowest level termed as the basement for use by guests and for storage and the laundry. Three small bedrooms, toilets, the store and laundry were comfortably accommodated around a central living space at this lowest level. The ground floor was proposed for formal use with a larger living room, a kitchen and dining space. In addition, the client asked for a small family room where the couple could sit in more intimate surroundings. The upper level required two bedrooms, and a study. The second bedroom was to be used by the sister of Rafet Ataç.

*d. Building Data*

The volumetric constraints imposed by the municipality were clear and simple and the form of the house responds to these constraints :

- A 10 $m^3$ defines the envelope;
- Overhangs were allowed on the third level and roof level only;
- 25% of the linear face on each of the four sides could project as overhanging balconies;
- The roof was required to have a slope of 33% and be covered with tiles;
- Garden walls could not be higher than 1 m and could be made only of timber or stone.

The floor area of the house including external walls totals 300 $m^2$; three levels of 100 $m^2$. This excludes the area of the six small balconies, one on each of the four corners and one at the centre of the north and south façades.

*e. The Design Concept*

*Siting*

The cube has been placed on the site such that it faces north towards Istanbul and the Sea of Marmara. The front façade is at the lower end of the site and has all three levels exposed above the ground. The rear, or south façade of the house exposes only two levels as the rear of the basement has been excavated into the slope of the site.

The surrounding landscaping has been designed with many levels which interconnect with stone and pre-cast concrete steps. The existing trees were carefully incorporated into the landscape. The house is located toward the eastern boundary of the site. This serves to vary the size of the open landscape around the house. The entry to the house from the east provides a small terrace for visitors. To the west side, five successive levels of terraces have been provided. The upper level has a covered terrace over the water tank and overlooks the next level, which has a barbecue oven. This overlooks the terrace at kitchen level that is large enough to accommodate a round table for up to eight people. The next terrace has a small pool and fountain. The final or lower terrace overlooks the road, is grassed and has a small timber pavilion. The rear or south side of the house has a rock garden, fruit trees, a poultry shed, a green house and a vegetable garden.

15 % of the plot has been covered by the plinth of the house as required by the municipality. The two covered pavilions are additional to this area.

*Spatial Organisation*

The spatial organisation of the house is simple and dictated by a structural grid. The various functions of the house have been organised within this grid at each level. There is no particular *rationale* to the location of the toilets which have been placed at the most convenient places on each floor. Service accommodations (kitchen and toilets) have not been grouped in one area of the plan. The two guest rooms, the main living room, the master bedroom and the study have been placed to the north side which overlooks the sea and Istanbul in the distance. The north side remains cool in the summer. The toilets, the kitchen and the second bedroom on the uppermost level face the slope of the site to the south.

*Formal Aspects*

The concrete frame which forms the core of the structure has been clad with timber weather board on façade, though the concrete columns are exposed. The overhanging balconies of timber are supported with timber brackets. All of these features - the concrete frame, the timber plank façade, and the overhanging balconies supported on timber brackets as well as the stone façade of the basement level - are deliberately styled, formal aspects of the architecture. Window openings are rectangular and framed in timber at the two upper levels. At basement level, the windows and doors have been framed with pre-cast concrete members. All doors and windows have solid timber shutters. These shutters can be closed and secured during the winter when the house is not in use.

The roof surface has been divided into a number of ridges and valleys. Municipal bye-laws dictate a tiled roof with a slope of 33%. The architect has kept the roof height to a minimum by treating it as a separate, flat element without gable ends. The north and south façades of the house are symmetrical while the the east and west façades are varied to accommodate window openings that correspond with internal room arrangements.

*Landscaping*

Considerable design effort was necessary to detail the landscape of the house. The use of pebbled pavements, pre-cast concrete elements and stone has been carefully planned and executed with the contribution and consultation of the stone-masons. The incorporation of the existing trees within the terraces and the planting of shrubs have been carefully articulated. Specially designed marble fountains that were carved in Istanbul have been placed in the garden.

*f. Structure, Materials, Technology*

*Structural System*

Reinforced concrete frame and floors. Stone infill wall for basement. Timber weather boarding on timber stud frame with insulation and internal plaster for the upper two levels. Timber frame roof with timber boarding and waterproofing.

*Finishes*

Exposed random rubble stone wall with flush pointing at basement level. Much of the stone was found on the site. Pre-cast surrounds to window openings.

The red oxide painted weather-boarding of the upper two levels is nailed to timber studs. Foam insulation is placed on the inside and covered with timber slats finished with gypsum plaster. The floor of the lower level is finished in polished marble. The upper level floors are timber on concrete.

*Construction technology*

Local, labour intensive technology. The mode of handling the construction of the house is the key to the high quality of its construction and finishes. The work was divided into sub-contracts and direct payments were made to the tradesmen. There is only one main contractor on the island of Burgaz who "handles" all construction contracts. He is a property developer's contractor who fixes lump-sum prices and usually determines his own finishes. For Turgut and Feyza Cansever, the prospect of employing such a person was unthinkable. The house had been detailed too meticulously to be arbitrarily constructed by a "turn-key contractor". The father and daughter architect team insisted on close supervision. The Clerk-of-Works, Mehmet Mete, was responsible for supervision and the implementation of their ideas. The Ataç family were initially against this method of construction; however, after much persuasion Rafet Ataç finally agreed to the proposal and work proceeded on this basis.

*Building Services and Utilities*

The *Prince's Islands* are not self-sufficient in their service requirements. While the family uses bottled water for drinking, the water needs for washing and cleaning are supplied from two sources. The first and older source is an existing water tank that is fed from a natural source. The source water from the nearby hill is supplemented by rain-water channelled from down-pipes on the eastern side of the house. The second water tank is fed from the municipal water source. Water from these two sources is ample.

The heaters and boilers are powered from the electricity supply. The sanctioned load is 16 KW. The house is wired and equipped to receive a load of 30 KW for winter. Cables are routed through PVC conduits which are either chased into walls or cast in-situ within the floor slab. The timber roof structure also has steel conduits. The electrical consultants Pertev Erdi are also electrical sub-contractors. They bid for the electrical contract along with two others and were awarded the work. Similarly, the plumbing sub-contractor Mudat Sayin was also the plumbing consultant. The storage capacity for fresh water in the house is rather excessive. There are three tanks; an existing tank fed from natural sources was retained and is supplemented by additional tanks of 35'000 litres and of 25'000 litres. A pump inter-connects the tanks. This large capacity was designed for the house when there was no municipal supply system and fresh water was pumped from a ship. Subsequently, the municipal supply was installed and the ship now brings fresh water from the Asian mainland and pumps it into a central island supply tank. The sewage of the house is connected to the island network.

*g. Origins*

The origin of the technology, materials, labour force and professional input is Turkish.

## IV. Construction Schedule and Costs

The architect was engaged, and designed the initial larger scheme in 1983. The initial proposal was rejected by municipal authorities. Scheme design work on the present house began in December 1984. The design was submitted to the municipality in February 1985, and approved for construction in May 1985. Construction began immediately and was completed by August 1986. Furnishing took some months. Rafet and Aysin Ataç first used the house in May 1987.

*a. Costs*

The initial budget of the house of TRL 60 million (USD 91'300) was considerably exceeded. The finally cost is estimated at TRL 90 million (USD 137'800).

The cost break down is as follows:

| | Turkish Pounds | USD |
|---|---|---|
| - Materials (sand, cement) and transportation | 11'617'250 | 17'000 |
| - Unskilled labour | 9'745'180 | 14'800 |
| - Concrete, timber roof structure, plaster, sub-contractor and master craftsman (without material) | 10'197'500 | 15'500 |
| - Wood work (with material) | 22'089'700 | 33'600 |
| - Electrical and plumbing work (with materials) | 6'245'630 | 9'500 |
| - Glass, iron, marble, tile, fireplace, garden, cupboards (with materials) | 8'169'000 | 12'400 |
| - Painting (with materials) | 5'196'000 | 7'900 |
| Total | 73'260'260 | 111'500 |
| - Add: cost of Professional Services and Supervision | 17'000'000 | 26'300 |
| Total | 90'260'260 | 137'800 |

Exchange rate, USD = TRL 657, Turkish Pounds.

b. *Source of Finance*

The entire cost of the project was borne by the owner.

c. *Comparative Cost*

The cost per square metre of this house was approximately TRL 286'000 (USD 436) at 1986 prices. This compares well with the construction cost of other villas built at the same time - as confirmed by the Clerk-of-Works Mr. Mehmet Mete.

d. *Maintenance Costs (1992 prices)*

The annual maintenance cost of the house is as follows:

| | Turkish Pounds | USD |
|---|---|---|
| Salaries | 12 million | 1'900 |
| Service materials | 8 million | 1'230 |
| Taxation | 10 million | 1'540 |
| Total | 30 million | 4'670 |

Exchange rate, USD = TRL 6'500, Turkish Pounds.

## V. Technical Assessment

*Functional Assessment, Weather Performance, Materials and Ageing*

Few differences exist between the design that was submitted in the municipal drawings and that which is built. The user is extremely happy with the house. Construction details of the house are excellent and the fabric is in excellent condition. The oxide colour on the weather boarding may soon require to be re-coated. The most significant aspect of its mass and volume is the way it sits comfortably on a sloping site with its overhanging balconies reaching out toward the sea. The roof that projects beyond the balconies enhances its poetic quality as a sea side house.

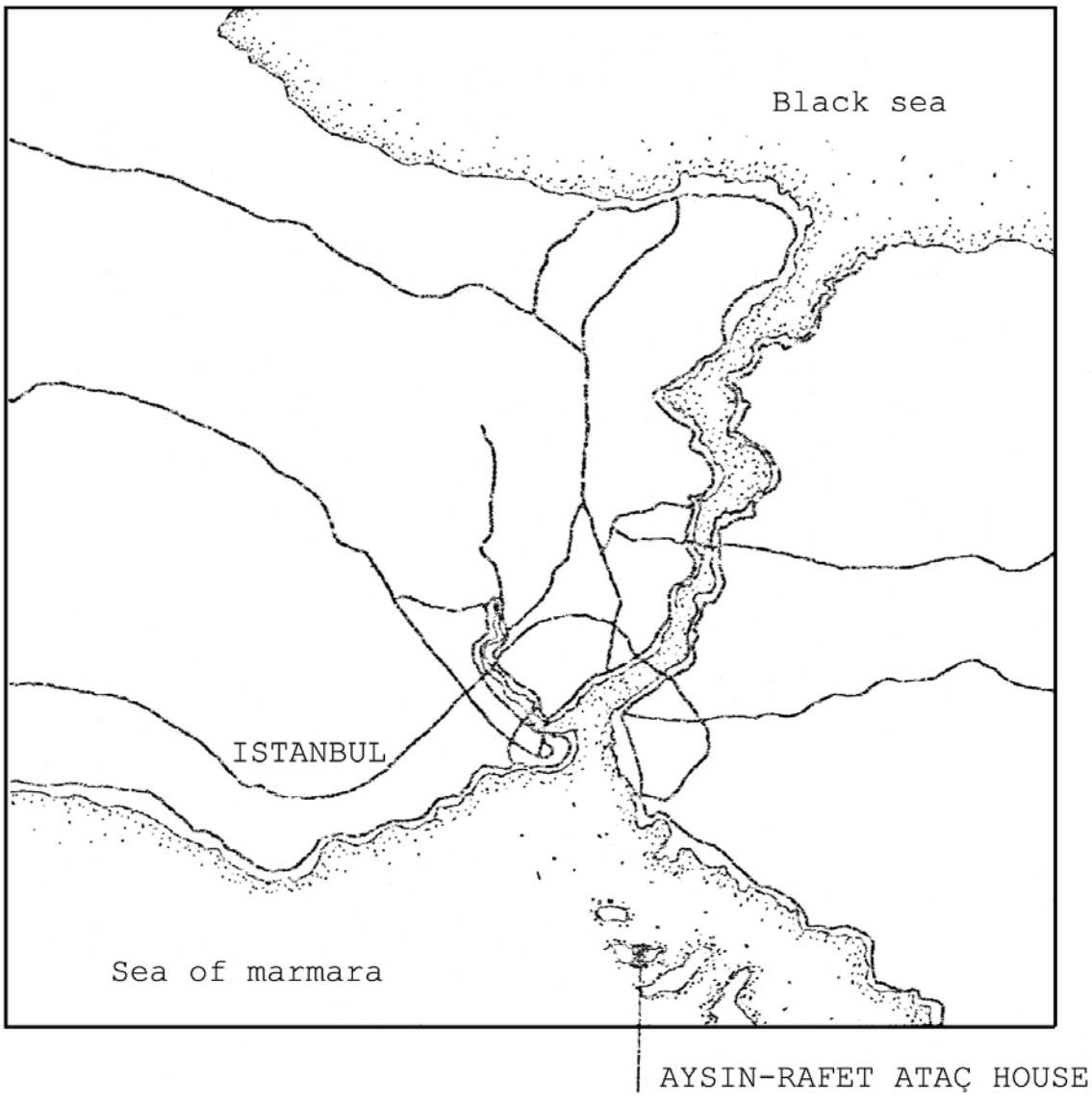
## VI. Users

The users of the house are the members of the Ataç household which consists of the husband and wife and their adopted daughter, as well as the sister of Rafet Ataç and her husband. In summer there is a steady stream of visitors. The Ataç family are extremely proud of their fine house and they receive appreciation from all visitors for the excellence of its design and construction.

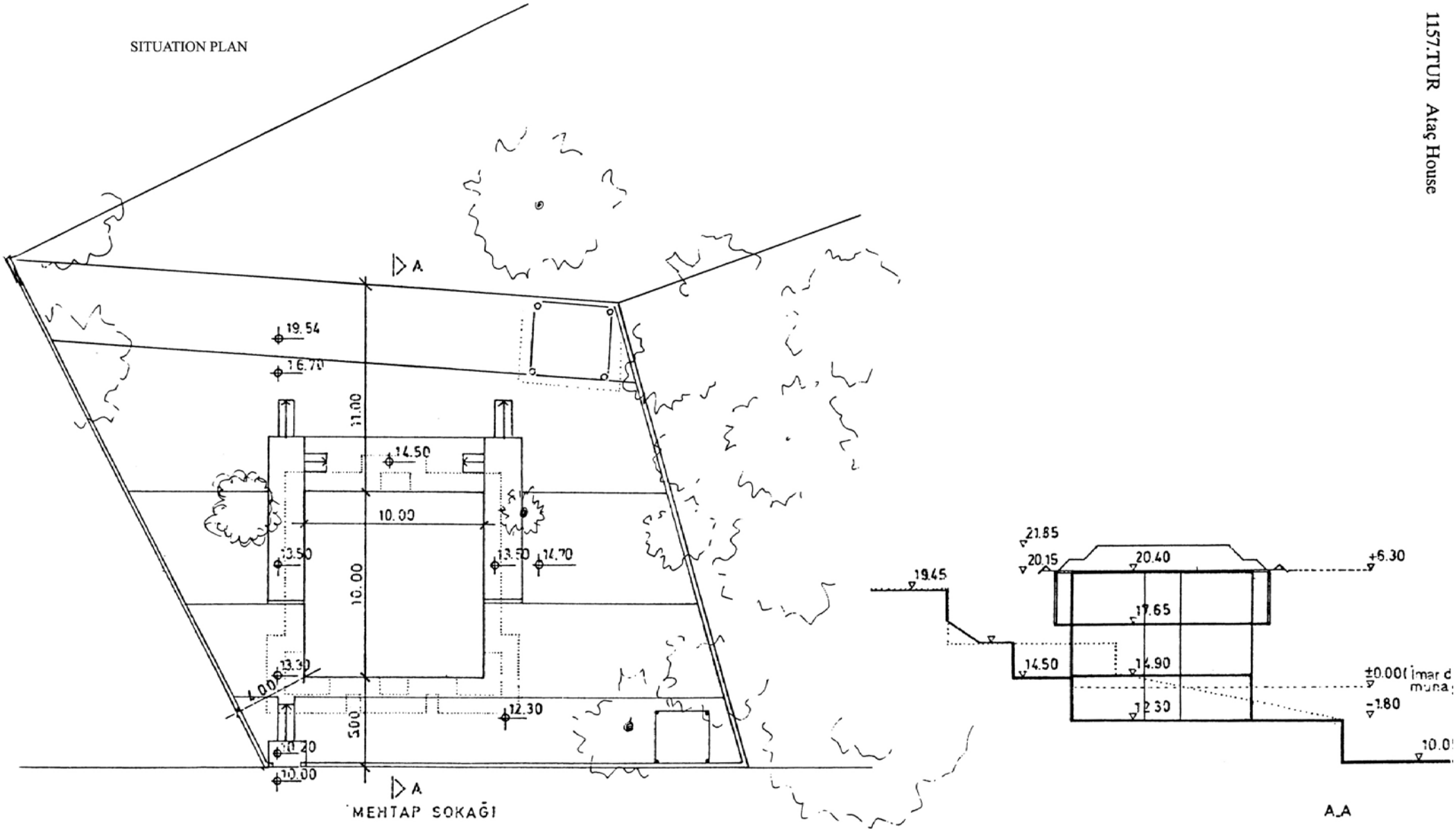
## VII. Persons Involved

| | |
|---|---|
| Architects, concept design | Turgut Cansever. |
| Detailed drawings and site supervision | Feyza Cansever<br>(The 24 year old daughter of Turgut Cansever). |
| Structure | "Turtas", Turgut Celebi. |
| Consultants and Subcontractors: | |
| - Plumbing | Mudat Sayin |
| - Electrical | Pertev Erdi. |
| Site supervision & steel subcontractor | Mehmet Mete. |

*Romi Khosla*
Istanbul, May 1992



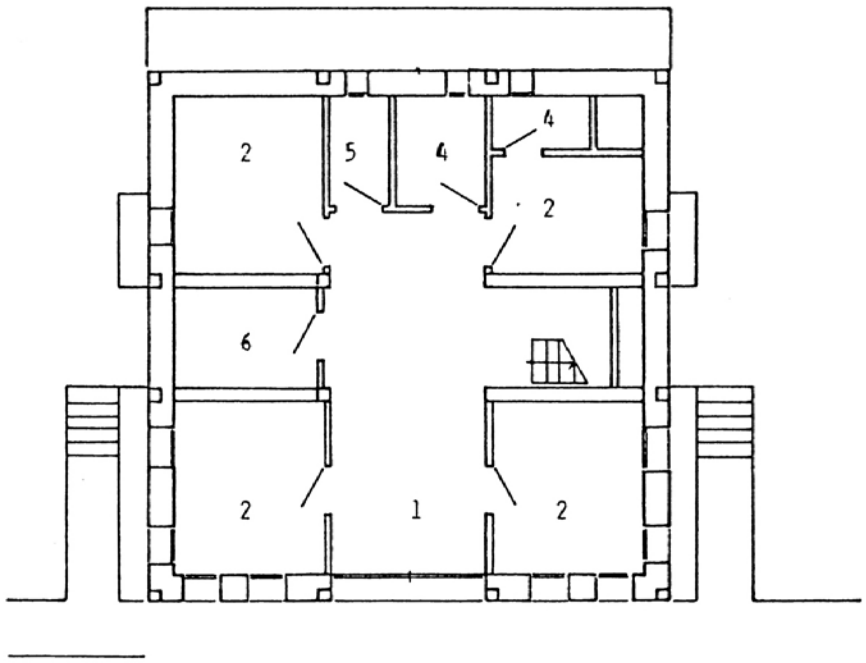

*Aysin & Rafet Ataç House, Istanbul, Turkey*




*Aysin & Rafet Ataç House, Istanbul, Turkey*

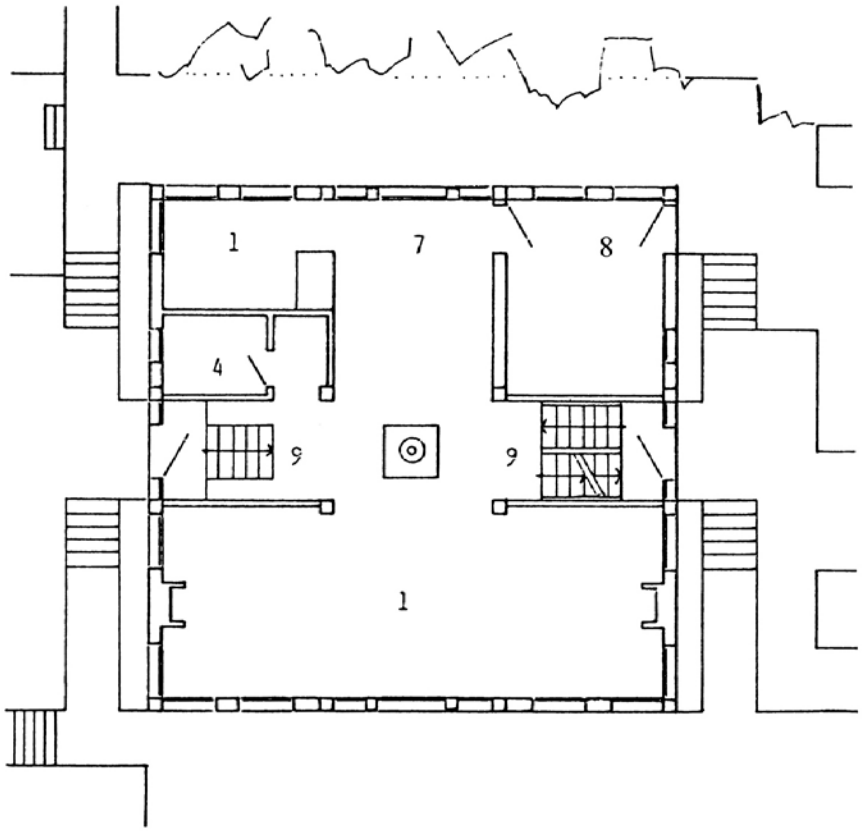
BASEMENT PLAN

1.Living room
2.bed room
3.sport room
4.bathroom
5.washing room
6.cave




GROUND FLOOR PLAN

7.dining room
8.kitchen
9.entrance



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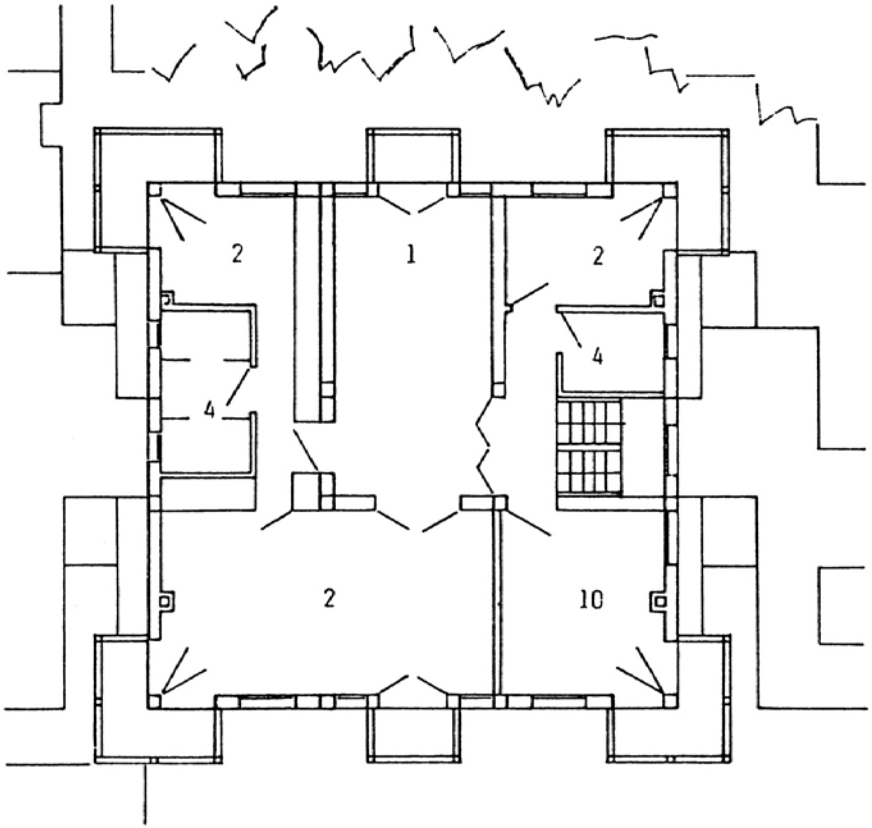
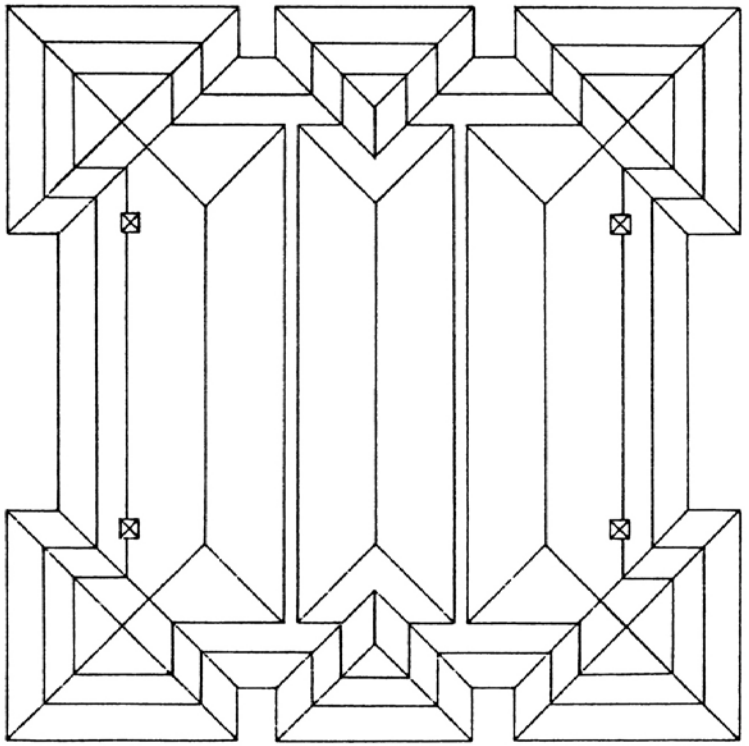
1 st FLOOR PLAN

10. study room

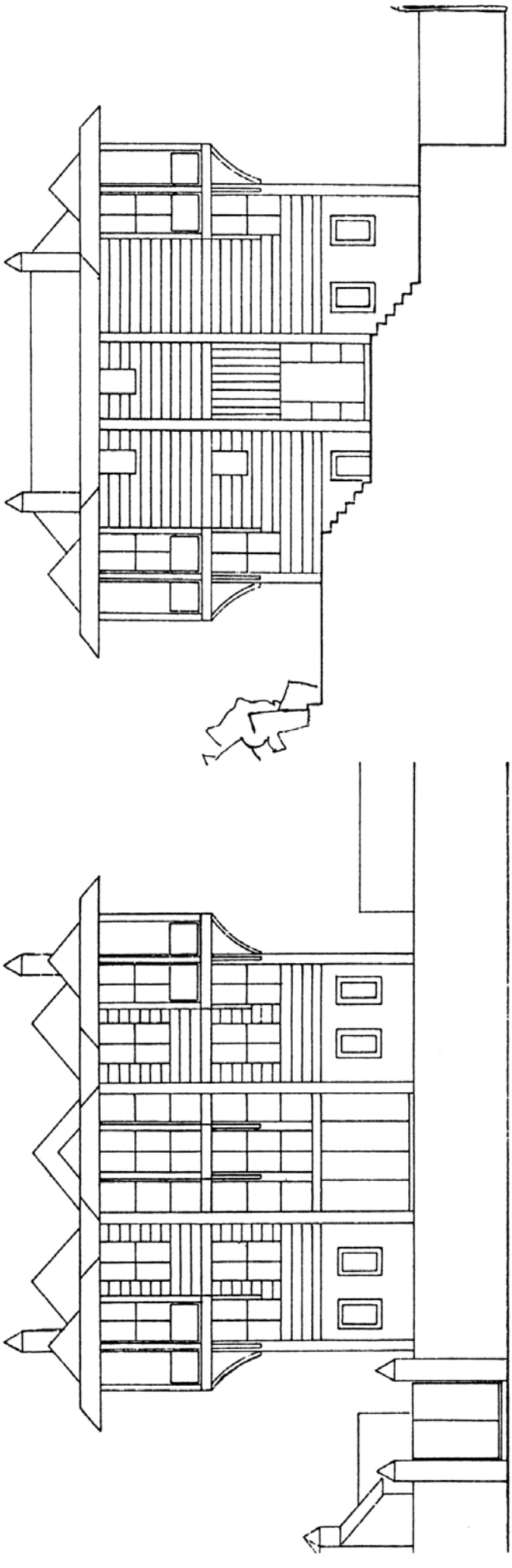



ROOF PLAN

1 / 100



**1157.TUR Ataç House**



Elevations

*Aysin & Rafet Ataç House, Istanbul, Turkey*