
Shalamar Garden*

Master Plan

1. Introduction

Walled gardens with raised walk ways (khayaban), open fronted summer pavilions (baradaris), canals with running water, large tanks with fountains are an important feature of Mughal architecture. Emperor Babur, the founder of the Mughal dynasty, is known to have laid out a number of charming gardens at Kabul, Agra and other places. Akbar and Jahangir also enjoyed gardens and made them an integral part of their palaces. Shah Jahan, the architect-king of the Mughal dynasty, introduced the features of terraces, cascades and a Turkish Bath (Hammam) in the gardens. The nobles and grandees of the court followed the examples set by the emperor and all important cities of the empire possessed a number of charming gardens. Lahore, the Darus Saltanat of the Mughals, had a large number of fine gardens and was known as a city of gardens.

Shalamar garden, the Versailles of Pakistan, is the embodiment of the Mughal conception of a perfect garden and represents their land-scape architecture at its best. The deliciously cool and pleasant atmosphere of the garden, calm waters of its tanks and canals, jetting fountains, rippling and singing cascades, swinging cypresses and long shady walk ways have endeared the hearts of many a spirited soul. Perhaps there is no other garden in the world in

which nature and man have combined to make it so lovely and where history and legend have woven so much romance.

Shalamar Garden is located in Baghbanpura along G. T. Road, some three and half miles North east of the main city. The garden was laid at the command of Emperor Shah Jahan (1627-1658 A. C.) on 3rd Rabi-ul-Awal 1051 A.H. (1641 A.C.). It was completed in seventeen months four days on the 7th Sha'ban 1052 A. H. (1642 A. C.) at a cost of 6 lakhs (six hundred thousand) Rupees. The project was completed under the superintendence of Khamullah Khan, a noble of Shah Jahan's Court, in cooperation with Ali Mardan Khan and Mulla Ala ul-Mulk Tuni.

Shalamar is variously written and pronounced and interpreted in many ways. The most plausible interpretation seems to be that shalamar is composed of two words 'shall' and 'mar'. In Kashmiri language these words mean 'paddy' and 'black' loamy soil 'respectively' The combined word 'Shalimar' would therefore mean 'black loamy soil for paddy' and indeed the site of the first Shalimar in Srinagar did possess such a soil. The popular name 'Shalamar' is a corruption of the original 'Shalimar'. The official name of the gardens was Bagh-Farah Bakhsh and

Faiz Bakhsh. Farah Bakhsh which means 'pleasure giving' was applied to the highest terrace and 'Faiz Bakhsh' corresponding to 'bountiful' was used for the middle and the lowest terraces together.

Shalamar Garden, enclosed by a high perimeter wall has been laid out in three descending terraces from south to north. The garden measures 2006 feet north to south and 874 feet east to west, some forty acres in area. The highest and the lowest terraces measuring 874' x 874' each are divided into four equal parts by the cross canals and raised brick pavements laid along both banks of the canals. There is a tank at the crossing of the canals. The middle terrace measuring 874' x 254' is 4' - 6" higher than the side ones. The central part is mainly occupied by the great tanks and four pavilions. The side ones measure 296' x 254' and are utilised for grassy plots, cypresses, pucca flower beds and small cisterns.

Irrigation - Shah Nahar

To irrigate the garden a canal named Shah Nahar (Royal Canal) later also known as 'Hansh Canal' was brought from Rajpur (present Madhupur, in India), a distance of over a hundred miles. It was planned by Ali Mardan Khan, the well known Canal Engineer of Shah Jahan, and completed by Mulla Ala ul Mulk Tuni, an expert in hydrology. The total cost incurred came to rupees two lakhs. Besides the canal, two large wells, one on the west and the other on the south of the highest terrace, were used for supplying water to the fountain. The well on the west is known as Bara Hatta.

Plantation

On the 24th Jamadal Ula A. H. 1051 (1641 A.C.) was commenced the plantation of the fruit trees of the summer

and winter seasons including mango, cherry, apricot, peach, plum, gokcha sultani (Rae Jaman), apple, almond, quince, seedless mulberry, sour and sweet oranges etc., saplings of cypress, poplar and varieties of odoriferous and non-odoriferous plants and shrubs.

2. Buildings of the Garden

2.1 The Highest Terrace

a) Aram Gah

The highest terrace contains the royal residential buildings. The building in the middle of the southern side is the Aram Gah (resting place of the emperor.). It has a marble dado and its large middle room contains a cup shaped marble cistern with a jetting fountain. On its sides are two chambers. The front is occupied by an aiwan with three arched openings on the northern side and one each on the east and the west. As a result of the change in the alignment of the Grand Trunk Road the Aram Gah was converted into a main entrance by Major Macgregor, Deputy Commissioner, Lahore circa 1850 A.D.

b) Naqqar Khana

The building in the centre of the eastern side is now known as Naqqar Khana, a place of drums or fanfare. Originally it was the *Jharoka-e-Daulat Khana-e-Khas-o-Am* or the Balcony of the Hall of Private and Public Audience. It has its own separate enclosure which still exists but in a ruinous condition with a pavilion or baradari in its centre which in all probability served as *Arz Bagi*, the office of the Minister of the Court.

c) Begum Ki Khwabgah

The building in the middle of the west side is the Khwabgah, sleeping chambers of the Empress. The present ceiling of this building is of the Sikh period of about 1838 A. C. During the early British period this building was

used as a Rest House for the local population. It is now in a dilapidated condition. The western part of the Khawabgah has disappeared and a modern water reservoir has been built over its remains.

d) *The Aiwan*

The arcaded building in the middle of the northern side of the terrace overlooking the great marble cascade and the two lower terraces, is the Aiwan or the Grand Hall. It has three cusped arched openings in its long side and two each in the other sides. It has marble dado and originally its walls were decorated with panelling and Naqqashi (Fresco work). Its present ceiling dates back to the Sikh period of about 1838 A. C. This hall was used as a reception place during the Royal ceremonies and functions and is still used for state functions. According to Kanahya Lal, Ranjit Singh removed its marble slabs including the marble screens (Jali), sent them to the Golden Temple at (Amritsar) and later white washed the surface thus exposed.

2.2 The middle terrace

a) *The Royal Bath*

In the south-east corner of the middle terrace is located a Hammam or Royal Turkish Bath. In fact it lies along the eastern side of the Middle Terrace and is composed of four chamber, Rakht Khana (dressing room), Sard Khana (cold room), Ab-e-Rawan (running water portion), and Khana (hot room), Originally the interior of the bath was decorated with Parchin Kari (Pietra dura work). The three Sikh rulers of Lahore who ruled from 1764 to 1799 A.C. and Ranjit Singh deprived this building of all its Parchin Kari and other decorations and ultimately replaced the same circa 1838 A.C. with the present lime plaster decorated with paintings in Sleco (painting on dry plaster). According to

another version the repairs were carried out by Maharaja Sher Singh.

b) *Great Tank*

The central part of the middle Terrace contains a big tank measuring 218'x191' with some 152 fountains. In the middle of the southern side of this tank and just opposite the great cascade (19'-8"x14'-6") stands the marble throne (8'-10"x6'-2"x3'-8"). On the eastern and western sides of this tank are located two pavilions now mostly lime plastered. According to Mulla Abdul Hamid Lahori, these pavilions were originally built in red sandstone which were removed during the Sikh period. The pavilion on the east measures 32'-2"x19'x16' (height) and that in the west 33'-6"x19'-8" x 16' (height.)

In the center of the tank, there is an island in the form of a raised platform approached by red sandstone causeways from east and west. This island was used for sitting on moon lit nights and for this reason was called, Mahtabi. It was originally in marble with grilled railing which, like other marble works, was robbed by the Sikh rulers.

c) *Sawan, Bhadun and Chini Khana*

On the northern side of this tank stand two pavilions known as Sawan and Bhadun each measuring 21'-6"x13'-5"x14'-6". They are named after the two rainy months of the Pakistani calendar. They were originally built in white marble which was removed by Maharaja Ranjit Singh.

The 'Chini-Khana', in fact is a three sided water-fall (abshar) measuring 26'-7"x21'-3" and 9'-3" deep. The fourth side is open. In the walls of its three sides are provided small niches in marble in which flower vases were placed in the day time and camphored wax candles in the night. By a special device water is made to fall in a sheet

over the walls containing the niches. In the night the lamps in the niches make an endless chain of light and coloured reflections on the water sheet falling on the opposite walls and therefore, it is also called Dip Mala i.e. a chain of lights.

2.3 The lowest terrace

a) *Daulat Khana-e-Khas*

In the middle of the northern wall of the lowest terrace is a three arched pavilion measuring 66'-8" in length and 21'-9" in height with its modern roof. This was the Daulat Khan-e-Khas (Hall of Private Audience) of the Emperor. Its dado was in marble and its walls were originally embellished with Naqqashi (Frescoes). In the centre was a marble cistern containing a fountain. Most probably there was a red sandstone chajja (eaves) below its parapet as in Aiwan in the first terrace. All these decorations are now missing and were probably robbed during the Sikh period.

d) *The Gateways*

In the center of the west and sides, are located the original main gateways. These gateways are high enough to admit a person riding an elephant. The gateways are embellished with tile mosaic work. It is the only place where enamelled tiles have been used in this monument.

Besides the above mentioned buildings there are six burjs, (Ghau Khandi) having a diameter of 16'-4". The burj or towers occupy all the corners of the Highest Terrace and the northwest and north-east corners of the Lowest Terrace. These burjs were most probably used by the guards when the emperor camped in the garden.

3. The surroundings

The setting of a monument whether natural or man made is important not

only historically but also for the vitality it imparts to the monument. The width and layout of surrounding thoroughfares, the arrangement and form of the neighbouring buildings, the nature of the vegetation-all contribute to the general effect and have therefore to be taken into account both in restoring and conserving monuments.

A good idea of the original grandeur of Shalamar may be formed by the fact that it was originally situated in the midst of thriving and luxuriant gardens, the property of the court nobility. To the south across the G.T. Road was Inayat Bagh and further south of it was Anguri Bagh. To the north was Mahtabi Bagh and a little away to the west was the Gulabi Bagh. A garden known as Bagh-e-Dara or garden of Prince Dara Shiko, is also said to have existed to the east of Shalamar. It is also recorded by the chronicles that Khwaspora a splendid quarter with palaces of the royal ladies, also existed in the vicinity. With the growth of population in Baghbanpura and the modern rush to the cities, many of these gardens have either completely disappeared or only their traces exist. The surroundings and the environment of Shalamar is thus seriously threatened and immediate necessary measures to avert the impending dangers have to be adopted. The present condition of the surroundings can briefly be narrated here:-

On the south of the garden now passes the G.T. Road leading to Wagha border post. Across the G.T. Road was Anguri Bagh which now has altogether disappeared except a part of its western enclosure wall. Along the enclosure wall of the garden on this side, there is a wide kacha foot-path. This belongs to the Highway Department. This footpath is being encroached upon nowadays and

already some khokas on its western length have been constructed. If this is not checked, it is feared this whole length will be covered by shabby shops covering the view of the southern enclosure wall of the garden. On the west side originally passed the old G.T. Road. Now there is a nursery, the playground of the Government Intermediate College, Baghbanpura and its premises as well as the overhead tank recently built by Lahore Municipal Corporation.

North side

Originally there was a Royal Fruit Garden known as Mahtabi Bagh. The area is now owned by Mian Arif Iftikhar and till recently it was a fruit garden having plants of mango, peaches, plum and other fruits but now it is being parcelled out into small plots for building purposes under the name of Madina Colony. If, this is not checked the entire privacy and charm of the garden will be lost and the luxuriant lush green view now enjoyed by the visitors in the Aiwan will be impaired by the view of new highrise buildings.

It was through Mahtabi Bagh by way of a small channel that the surplus water of the canal from the lowest terrace passed to a pucca disposal tank lying beyond and north of the Mahtabi Bagh. This tank has lately been filled up.

East side

On this side some modern buildings have already sprung up. One is located just opposite the grand Entrance Gate and its occupants keep the exterior of the gate in a filthy condition as their cattle are stabled there. Now people have started building their huts against the exterior of the wall and they also scale the enclosure wall. The Naqqar Khana court which originally formed the integral part of the Garden also lies

on this side. The Naqqar Khana is now in possession of Mian Arif Iftikhar and others and since they are not interested in its proper maintenance, the entire enclosure wall except for small portions has collapsed and the entrance gate of this court is hanging precariously. The buildings in this court have also deteriorated and are in a very dilapidated condition. An open fronted pavilion in the court which served as Arz Begi now presents a desolate look. The base of its walls has been eaten up by saltpetre and the floor has completely disappeared. The plaster is also crumbling fast.

On the south of the Naqqar Khana enclosure is an open area which was the camping ground for the royal army. This area is still a camping ground of the Pakistan Army and under its control.

4. Measures for Preservation and Restoration

The monuments and sites which are the memorial of human activities in the past enhances the background to every day life and provide a sense of continuity with the past. They constitute an essential part of man's heritage and a source of enrichment and harmonious development for the civilisation of today and tomorrow. The monuments are moreover a major factor in the economic and touristic development of nations. Today all civilised opinion is agreed that all outstanding monuments and archaeological sites in the world are the legacy for the entire human race and the countries possessing them are no more than being merely their trustees. They are thus responsible for their proper preservation to the comity of nations. The preservation of the monuments implies a rough conservation and where necessary, proper restora-

tion of monuments. The conservation of ancient monuments is however, an intricate process completely different in form and spirit from the repairs of new buildings. The primary object of conservation is to preserve the original character and components of a monument as far as possible so that the authenticity of the monument is not impaired. The restoration, where necessary should be carried out in accordance with the techniques and materials used by the original builders. To preserve the scale of the monument it is also essential to preserve its environment and surroundings as far as possible.

Shalamar Garden is one of the most charming gardens of the world and the only example of a perfect Mughal garden in Pakistan. Its magnificent buildings rippling and singing cascades, jetting fountains and canals with running water have suffered the ravages of time and human vandalism. To the Sikhs goes both discredit and credit for the destruction as well as the preservation of the Shalamar. The monument suffered most at their hands from 1767 to 1800 A.C. It was deprived of all its marble and other decorations either to provide monetary gains or to decorate their religious or secular buildings. In fact at the beginning of Ranjit Singh's rule (1799 to 1839 A.C.) the canals and tanks of the garden were filled up and the whole area was cultivated. But when Ranjit Singh established himself and gained wealth and power he felt the need for preserving the Shalamar Gardens. He restored the water supply, stopped ploughing inside, lime plastered the denuded structures and restored the garden. Sher Singh also carried out thorough repairs to the royal bath. But for their belated patronage

Shalamar might have disappeared like its proto type at Delhi. The condition of the garden did not improve under British rule and parts of its buildings were used as rest houses for the Europeans and the local population.

Ever since the Shalamar was handed over to the Department of Archaeology every effort has been made to preserve its buildings, restore the garden to its original lay out and recreate the original Mughal surroundings and atmosphere. Unfortunately the pressing needs of preservation and restoration of the garden have never been able to arouse sufficient interest in the people of Lahore or the Government to provide adequate funds for the same. The condition has therefore not improved to the entire satisfaction of the Department. It is true that some of the geometric pavements of the khyaban walkways have been restored, water connections of the fountains relaid and necessary petty repairs to the enclosure walls carried out, but much remains to be done.

In the Master plan an attempt has been made to focus attention on the major works of conservation and restoration necessary for its proper preservation. The detailed measures adopted require a chapter for each item but they are narrated briefly below:-

4.1 The highest terrace

The Aramgah Khana

The building in the centre of the southern side was originally the Aramgah. As described earlier Major Macgregor, the then Deputy Commissioner of Lahore converted this building into the Entrance about 1850 A. D. by making an opening in the centre of its back wall. Originally the floor of the Aramgah in the portico as well as in the side rooms was in marble instead of the present red sandstone flooring and lime

terracing. The red sandstone looks incongruous with the marble dado and the floor will therefore be relaid in marble in the original design. The marble flooring will have a border marked with a black lining. The modern R. S. joist and battened roof of the side rooms will be replaced with R. C. C. slabs and the lower surface given a curvilinear form and finished with Ghalib Kari similar to the one in the western room. The present clumsy doors and windows of the Sikh period will be replaced with Mughal type battened and braced doors and windows with typical brass fittings. The walls of the side rooms were originally decorated with delicate Munabbat-Kari (stucco tracery work) and ample traces of the same still exist. The original will be preserved and the feature restored over the entire surface of the wall. In the portico or verandah, originally, there was a sprinkling of floral fresco work beside the existing loti form designs in relief. After examining its nature and extent the same will also be restored.

The garden and its canals were originally watered from Shah Nahar passing underneath the middle room of Aramgah and the portion of portico in its alignment. Now canal water has been abandoned in favour of the tube-well water and the covered portion of the canal blocked on its outer end, but the cavity under the floor of the room still exists. Water of the fountain above percolates into the cavity, remains stagnant there and causes dampness in the superstructure. The floor of this chamber will be opened, the sides made damp proof by giving a vertical damp proof course along the walls, the bed raised about one foot and a copper pipe laid to drain off the water from the fountain into the open canal on the north. A double roof

was originally provided over the side rooms perhaps for keeping them cool during summer. Such a double roof still exists in the western room. This upper roof is of battens and R.S. joists and appears to be of the Sikh period. In the Mughal times it might have been a flat or chatta arch. The present roof is now decayed and it is proposed to replace it by an R. C. C. slab. The decayed pieces of the red sandstone chajja (eaves) of the portico will be replaced and the panelled plaster of the exterior restored in patches where it has decayed. The whole will then be given a pucca Qalai coating.

The canals

The bed of all the canals and cross canals has become rough with the result that it catches impurities in water and dust and thus not only remains dirty but helps growth of fungus. The whole will be given a surface treatment of about half an inch thick coat of white cement, mixed with marble powder. In some of the canals the bed has become too rough and absorbent. In such cases the whole of the old lime terracing will be removed, the joints of the base course of the bricks properly raked and a damp proof course of cement concrete 1:2:4 provided and well cured.

The pavements

The cut and dressed diaper pattern brick work of pavements, barring a few, is in an advanced stage of decay and needs restoration. The restoration will be done with a similar technique with a damp proof course, 2 1/2" thick of cement concrete 1:2:4 underneath.

The Aiwan (the reception hall)

Originally it was the finest building of this royal garden. It was all paved in marble with a border and perhaps somewhat like the space under the arches on the north overlooking the

second terrace in tessellated marble flooring. This being the place where all dignitaries are seated during their reception, the plan provides its restoration on the original pattern.

The existing decayed cement plaster over the walls will be scraped to the brick core. The joints of the brick will be raked to a depth of at least $\frac{1}{2}$ ". Thereafter the entire surface will be cleaned and given a wash of a solution of cement mixed with 10% pudlo. Over this kankar lime plaster will be restored to the original thickness in three coats: the top one being of pucca Qalai with a sprinkling of stucco designs in relief in loti form and fresco work specially in the spandrels of the marbles. The designs to be adopted will be worked out later. The ceiling in tarsimbandi is of the Sikh period. It will however, be retained but painted afresh in lacquer according to the original designs.

There are signs of salinity on the walls which is the result of dampness. Below the floor of the Aiwan there exists a tank which is fed by the canal and when full, its water spills over the famous marble cascade in the middle terrace. It appears that the walls and the floor of this tank now absorb water. This tank should be opened and the walls and floor of the reservoir should be made water tight by laying a damp proof course of cement concrete 1:2:4.

The decayed and missing members of the red sandstone Chajja will be replaced using a technique similar to the that originally used. Its angle of slope will also be adjusted. The plaster covering the eaves has decayed and will be replaced by a fresh layer of Kankar lime strengthened with 10% grey cement. The missing brackets of red sandstone supporting the chhajja will also be provided, similar to the

original.

The staircases on the east and west of the Aiwan

These staircases are in a good state of preservation except for a few stone slabs here and there which have decayed because of salinity on account of dampness. Such slabs will be replaced by new ones, but before laying the new slabs, the surface of the brick masonry in core will be treated with a solution of grey cement with 10% pudlo after clearing the surface including raking of decayed material from the joints of the masonry. The balustrade or railing on the three sides of these staircases is at present of iron grill, painted in red but originally it was in red sandstone jali which will now be restored as the iron grill being an anachronism is an eyesore in these ancient surroundings and atmosphere.

The ramps

Beyond the staircases mentioned above are the ramps which are paved with brick on edge which though in a fair state of preservation have become slippery because of thick pointing. The pointing has to be removed and decayed bricks in patches replaced. The pointing should be flush but not overlapping. The railing or balustrade of the ramps is in heavy terracotta jali of the Sikh period locally called pinjras. It is built on low brick plastered walls and are badly lacking in proportions. Originally this railing must have been in red sandstone jali with a base and top rail with lattus. The base rail, it appears was fixed on a red sandstone dasa. The point will be examined and the railing restored accordingly.

The grill over the dividing wall

The highest terrace is 14'-8" higher than the middle terrace and needs some measure of protection against acciden-

tal falls. At present there is a Sikh period terracotta railing on a dwarf wall. It looks very odd and clumsy and is lacking in proportion. Originally there was a marble grill as mentioned by the historian Muhammad Saleh Kambob. There is however controversy about its height. Latif has mentioned that it was of a man's height segregating the Royal Harem when Royalty was in camp. On the other hand a high screen wall will block the view of the two lower terraces and thus defeat the very idea of a terraced garden. Moreover a high screen will look ill - proportioned and will upset the balance of the arched panels on the outer surface of the curtain wall seen from the middle terrace. Therefore a marble screen of not too close a mesh and about the same height as in the Aiwan will be provided at this wall.

The red sandstone veneer of the curtain wall

The stone slabs of this arcaded veneer, have decayed in many places and show signs of dampness on account of the percolation of water through the brick core of the wall from the upper terrace. If measures to stop this percolation are not taken now, this beautiful red sandstone veneer may not last long. A vertical damp proof course is therefore proposed to be applied along the inner surface of the wall. This will involve the demolition of a small width of the pavement in the upper terrace, and the excavation up to the depth of the wall in question. Before applying the damp proof course of cement concrete 1:2:4 with 5% pudlo added to it, the old plaster of the wall if any, will be removed, the joints raked to a depth of 1" and then the surface treated with a solution of grey cement mixed with 10% pudlo.

4.2 Middle terrace

The raised platform in the middle of this terrace contains a large tank with a mahtabi, a marble cascade, a marble throne and four pavilions.

The tank

The large tank originally had its curbing covered with marble slabs in multi - foil shape. The sides of the tank were also covered with marble. The Sikhs removed the marble and plastered the exposed surface. The plastered surface militates against the ornamental character of the tank. It is proposed in the Master Plan to restore the marble of the curbing in the original shape and clad the sides with marble. Before carrying out these works the existing plaster will be removed and the joints of the brick masonry in the core raked out, and the surface treated with a coat of cement solution mixed with 10% pudlo. The floor of the mahtabi in the centre of the tank will be relaid in the red sandstone as originally provided after treating the core masonry as detailed above. The existing railing in brick masonry of the Sikh period will also be replaced with a perforated marble railing in a geometrical design.

The pavilions

The side pavilions of the tank on the east and the west were originally faced with red sandstone which was removed by the Sikhs. Similarly two pavilions on the north of the tank known as Sawan Bhadun were originally covered with marble facing as recorded by the contemporary historian Mulla Abdul Hamid Lahori. The pavilions were completely denuded during the Sikh period and their marble removed for use elsewhere. The present lime plaster of the Sikh period has mutilated the very character of the pavilions. The red stone and marble facing must be restored as

pure ornament. The Master Plan provides for refacing the pavilions as originally done. The facing will be done in true form and in the spirit of Mughal architecture restoring the multicusp arches, the columns with their base, shaft and capitals in the original shape and all mouldings in the real Mughal curvature. Before facing the pavilion with marble slabs, its masonry will be treated as in the case of the walls of the tank as described above. The ceiling of all the pavilions in tarsimbandi belongs to the Sikh period and is in a fairly good state of preservation. It is proposed that tarsimbandi should be preserved but painted afresh in lacquer in the original patterns. All the four pavilions in this terrace are provided with small 'burjis' on the four corners of the roof. The burjis are of the Sikh period. It is proposed to remove this external element after thorough examination of the same.

The cascade

The great marble cascade has lost its black inlay in its chini khana and developed cracks which are a source for percolation of water in the core of the cascade causing dampness. It is provided in the Master Plan to examine the cascade thoroughly and check all sources of percolation of water. The missing lining of the cascade will also be restored in black marble. The Khayabans on the sides of the shallow basin in front of the cascade were originally paved with marble slabs. The internal facing of the slabs was worked out in dasa pattern. The dasa pieces were removed, sometime in the past, and assorted pieces of marble from different parts of the buildings laid there to serve the purpose. These pieces have a black lining and do not blend with one another. It is proposed to remove these incongruous pieces and restore the en-

tire area of the Khayabans with proper marble dasa and slabs. The marble of the cascade has also gone yellowish due to age and weathering effects. This will be thoroughly cleaned and polished.

The pavement

All the pavements in the middle terrace have deteriorated and are in an advanced stage of decay due to constant use. It is proposed to restore the pavements preserving as much of the original patches as possible. The pavements will be laid over with a base of 1 1/2" thick damp proof course 1:2:4 over a layer of 2 1/2" thick cement concrete in the ratio of 1:3:4. The entire base will be laid over a cushion of 3" thick layer of sand.

In addition, thorough repairs to the small cascades on the sides of the raised platform and shallow canals in the two lower portions of the Middle Terrace will also be carried out.

Tazakari work

The walls on the south, east and west the terrace were originally decorated with tazakari work (brick imitation). Portions of the original work which still exist will be thoroughly cleaned chemically. The remaining surface of the walls will be provided with tazakari work in the original pattern. In the original scheme of decoration the spandrels of false arches were plastered and the interior of the panels lined with brick imitation. Restoration will be done with the original technique and form.

4.3 The lowest terrace

Pavements

All the Khayabans (walk ways) on the sides of the canals and along the enclosure wall had brick on edge pavement in geometrical designs. Almost all the pavements in this terrace have been shattered and decayed due to constant use and effects of weathering. It

has been provided in the Master Plan to restore these pavements in the original design as detailed above.

The enclosure wall

The enclosure wall had 'kanguras' or merlons at the top but they have disappeared at a number of places. The plaster of the wall is also crumbling fast due to weather effects and salts. It is provided in the Master Plan to restore the missing 'kanguras' in brick masonry in the original form. The newly restored 'kanguras' will be kankar lime plastered to match the adjoining surface. The plastering of the wall will also be carried out with kankar lime mixed with lime cream in the ratio of 7:1 and strengthened with half a seer of chopped jute per maund. Before carrying out plastering the surface of the wall will be thoroughly cleaned and joints raked out to a depth of 1". Thereafter the surface treatment as explained above will be carried out on the newly exposed surface of the brick masonry.

Gateways

The original entrance to the garden was made through two gateways in the eastern and western sides of the enclosure wall in this terrace. After the opening of the new entrance in the middle of the highest terrace in the middle of the 19th century these gates were closed and fell into disrepair. The original door leaves were removed sometime in the past and the modern door leaves look ugly in the ancient setting. It is proposed to provide new Mughal type battened and braced wooden doors. The imposing original gateways were embellished with colourful tile mosaic, the only example of this art in Shalamar. The tile mosaic has considerably decayed and needs restoration. The restoration will be carried out in the original scheme after this technique has been properly

revived in the Departmental workshop. Thorough repairs to the gateways will also be carried out.

The Pavilion

In the middle of the northern wall is located a pavilion which, as recorded by Mulla Abdul Hamid Lahori, was the Daulat Khana-e-Khas (Hall of Private Audience). This pavilion has badly suffered at the cruel hands of time and the vandalism of the Sikhs. Its entire dado and floor marble is now missing. The modern roof with wooden battens laid on R. S. Joists now replaces the original arched roof. It is provided in the Master Plan to restore its marble flooring copying existing specimens, and refacing the dado with marble slabs inlaid with black marble lining. The denuded walls will be plastered in kankar lime after surface treatment as described above. All the panelling and loti from decorations will be restored in the plaster on the original scheme and patterns. The existing modern roof will be replaced by R. C. C. slabs treated internally in curvilinear form and finished with Ghalib Kari. Attempts will also be made to restore the missing frescoes in the original scheme of floral and geometric designs.

Corner burj

The corner burj (chaukhandi) are double storey buildings. The lower storey comprises an octagonal chamber with an open fronted aiwan and the upper storey comprises a domed pavilion built in red sand stone. The terraced flooring, kankar lime plaster and ghalibkari work with fresco, lining the ceiling of the chamber have deteriorated and decayed. The red sand stone chajja (eaves) are also in a dilapidated condition. Some red sand stone members of the chajjas, jali and mutakas and columns of the upper pavilion have also

decayed considerably and need replacement. It is proposed in the Master Plan to restore all decayed members of the upper pavilion in red sand stone in the original pattern and designs. The missing members will also be restored according to the existing specimens and in conformity with Mughal architecture. The decayed flooring, lime plaster and ghalib kari of the chambers will also be restored similar to the original, preserving as many original patches as possible. Before applying the kankar lime plaster of the original thickness, the brick masonry in the core will be raked, the salt mortar removed and the surface given a coating of cement solution mixed with 10% pudlo. Efforts will also be made to stop rising dampness by providing damp proof courses where necessary. The ghalib kari in the ceiling will also be laid with original fresco colours after thorough examination. A lump sum provision of three lakhs of rupees has been made to carry out thorough conservation and restoration of the six buris as detailed above.

Naqqar Khana

Naqqar Khana or the buildings of fanfare located adjacent to the eastern wall of the highest terrace originally formed an integral part of the Shalamar Garden. According to Mulla Abdul Hamid Lahori this building was used as Jharoka-e-Daulat Kahana-e-Khas-o-Am or the balcony of the Hall of Private and Public Audience. It had its own separate enclosure with an entrance gate in its south side. There stood an open fronted pavilion or baradri in the middle of the eastern side of the enclosure known as Arz Begi. The Naqqar Khana is in possession of Main Arif Iftikhar and others and apparently they are not interested in its maintenance with the result, that almost all of its enclosure

wall has collapsed and all the buildings are in an advanced stage of decay. The Department has been trying to acquire the entire area for the last decade but in vain. The case is still in High Court and may be decided shortly. If the area is acquired the Department plans to carry out thorough conservation to its buildings and restore the missing portions including the enclosure wall.

The thorough conservation and restoration of the enclosure wall will involve reconstruction of the missing portions with country brick masonry in kankar lime mortar and restoration of its missing plaster in cusped arches and decorative panels. Restoration of white marble and red sandstone jali in the balcony, reproducing fresco paintings, stucco tracery and ghalib kari work on the original pattern and designs will also be carried out in the main buildings of the Naqqar Khana. The restoration of the curvilinear chajja in brick masonry of the pavilion (Arz Bag), underpinning of its decayed brick masonry and restoration of the deteriorated plaster with decorative panelling will also be carried out. Brick on edge pavements in geometrical design will also be relaid in the enclosure on the original lay out. Thorough repairs including underpinning of the decayed masonry, restoration of plaster in kankar lime mixed with lime cream in the ratio of 7:1 and strengthened with chopped jute @ half a sear per maund have also been provided in the Master Plan. The existing door leaves of the Sikh period will be replaced by Mughal style doors with battened and braced wooden leaves. A lump sum provision of rupees six lakhs has been made in the Master Plan to cover the expenditure on the conservation and restorations of Naqqar Khana.

5. Improvement of Gardens

Besides its magnificent building Shalamar is also famous for its charming and refreshing garden. It is recorded that a large variety of fruit trees of Summer and Winter seasons was planted in the gardens during the Mughal period. During the Sikh period most of these trees died and new trees of mango were planted in their place. Later during the possession of the garden by Main Iftikharuddin a few other varieties were also introduced. Most of these trees are now old and need replacement. The grass in the lawns is clogged and needs returfing. The old arrangement of irrigating the garden by canal water is also disrupted. The present pumping plant is insufficient to cope with the demand for water for the canals, fountains and the lawns. It is proposed in the Master Plan to reintroduce the trees of the Mughal period, namely grafted mango, cherry, apricot, peach apple, almond, mulberry, sour oranges, sweet oranges etc. It is expected that with the introduction of these trees the income of the garden will also be enhanced approximately to the tune of Rs. 50,000/- per annum.

The present water supply arrangement by a single tubewell is hardly sufficient for both the canals and lawns in the first terrace. It is provided in the Master Plan to install a new deep turbine for augmenting the present water supply. The lawns spreading over an area of 40 acres will also be returfed during the operation of the plan. To make proper arrangement for the water supply to the lawns a network of G. I. Pipes will be laid in all the three terraces. The entire scheme of improvement of gardens and returfing of lawns etc. is estimated to cost Rs. 3,98,475/-.

6. Acquisition of land

The surroundings of a monument constitute an essential part of its layout. Any change in the environment and setting around the monument disrupts not only its scale but also affects its very character. The Shalamar Garden, one of the most important monuments of the Mughal period in Lahore, is seriously threatened by ever increasing encroachments around it. As described previously the monument is already surrounded by shabby hutments. If this is not checked at this stage it will not be possible in future to keep the setting of the monuments in its original form. It has therefore been proposed in the Master Plan to acquire an area of 200 feet around the monument for this purpose. The total area to be acquired for the purpose comes to 337 canals and the estimated cost of land at the present market rate comes to Rs. 84,25,000/-

The area thus acquired will not be safe until it is demarcated and developed into grassy lawns. A sum of 3 lakhs of rupees has therefore been provided for developing the area into grassy lawns and demarcating it with barbed wire fencing around it.

It was in mid 1960 that the Department chalked out a programme for illuminating the buildings and gardens of Shalamar. The project was carried out by Philips Electric Company and has been appreciated by the people. The experts however, have suggested certain additions and alteration with a view to laying more emphasis on the architectural aspects of the garden. It is proposed to carry out these alterations and extend the illuminations to the remaining two terraces, namely, the Middle Terrace and the Lowest Terrace. A detailed scheme for the same will be worked out by Electrical Engineers in

consultation with the Officers of the Department in due course. A lump sum provision of 6 lakhs of rupees based on the previous expenditure has been set aside in the Master Plan.

7. Abstract of cost

	Sft.	Per Sft.	Amount
1- Restoring brick on edge pavement in geometrical patterns laid with finely dressed and rubbed bricks of special size (7 1/4" x 4" x 15/16) in cement mortar (1:3)	Sft. 328224	Sft. 13/-	Amount 4266912.00
2- Kankar lime plaster 3" thick (on average) strengthened with white lime cream in a ratio of (7:1) and finished in two coats.	31950	Sft. 270/50	86425.00
3- Kankar lime plaster 2" thick (on average) strengthened with white lime cream. In a ratio of (7:1) and finished in two coats.	65450	160/50	105047.00
4- Restoring the decayed and missing tazakari work over the prepared surface to match with the adjoining work.	21000	Sft. 6/-	126000.00
5- Providing and restoring white marble jalis side posts (Mutakas), moulded base stone Dassa under the jalis as per original lay out pattern.			782496.00
6- Providing and restoring from 1 1/2" to 3" thick white marble facing on brick core of the pavilions on either side of the central tank in cement mortar (1:3)	3950	%sft 61/-	240950.00
7- Providing and restoring 1 1/2" to 3" thick white marble facing laid in cement mortar 1:3 similar to the original.	2650	% sft. 63/-	166950.00
8- Kankar lime palster 1" thick (on average) strngthened with white lime cream in a ratio of 7:1 and finished in one coat.	50052	109/-	82285.00
9- Pucca Qalai plaster 1/4" thick over the base coat of kankar lime plaster including decorative panels and cusps of the arches.	5052	200/-	100100.00
	Total:	B. F.	5957169.00
10-Providing and restoring the missing fresco paintings in floral designs as per original lay out after the detailed study.	sft. 9600	sft. 30/-	288000.00
11-Providing and laying red sand stone chajja (eaves) by using old and new stones in 1:2 cement mortar stained to matching colour.	3700	52/-	192400.00

	Sft.	per Sft.	Amount
12-Providing and laying 2" to 2 1/2" thick white marble flooring with inlay work in white and grey cement mortar 91:2) as per original design and patterns.	17300	40/-	692000.00
13-Restoring tarsimbandi with design in lacquer paint similar to the original.	4300	6/76	24725.00
14-Terraced roofing 3" thick with kankar lime (1:2) strengthened with 10% cement.	11950	% sft. 138/50	16556.00
15-Restoring the missing and decayed inlay black marble pieces in white and grey cement mortar (1:2).			10000.00
16-Providing and fixing in position deodar wooden doors as per Mughal design and pattern 3" thick with the vertical battens (6'x4') on the back, complete with spikes, nails and hinges etc.			30000.00
17-Thorough and urgent petty repair to corner towers such as restoring the missing red sand stone jali, muttaccas, stone flooring of lower chamber including the front aiwan.			300000.00
18-Thorough repairs to Khawabgah such as restoring the missing terraced flooring, plastering fresco painting and also providing Mughal pattern doors to the front opening.			30000.00
		Total:-	7540850.00
			B. F. 7540850.00
19-Removing the decayed and deteriorated red sand stone facing carefully from the dividing wall between 1st and 2nd terrace and re-using the new and selected stone members out of the old ones in place of damaged ones.			150000.00
20-Restoring the missing, decayed and damaged portion of the enclosure wall, brick pavement, reproducing the fresco painting white marble and red sand jali, muttaccas, red sand eaves and other thorough repairs of the main structure and Arzbegi including the development of its gardens according to the original lay out of Naqqar Khana.			6000000.00
21-Provision for the purchase of white marble and sand including all its transportation charges etc.			900000.00
22-Provision for thorough examination of the pavilions to find out root cause of the dampness causing great damage to the structures and the rectification, thereafter.			43961.00

	Sft.	per Sft.	Amount
23-Very urgent and unavoidable repairs scattered all over the monuments to add structural stability, also to restore minor missing features of Ghalib Kari, Munabbat Kari and retouching of fresco paintings.			200000.00
24 -Providing and fixing stereo tape recorders with amplifier and extra speakers at different buildings of the first and 2 nd terraces for commentary on the monument & all other unforeseen expenditure.			30000.00
25-Removing the decayed lime plaster to expose the brick core of the pavilions.	% sft. 50000 Total:-	% sft. 2/ 1000.00	9465811.00 B. F. 9465811.00
26-Dismantling the red sand stone flooring and their removal to suitable place for storing somewhere for reuse when so required.	sft.	%sft. 5000	900.00
27-Taking down the old and decayed red sandstone Chajja (eaves) slabs etc. carefully and their removal for storing at a suitable place in the 3rd terrace for reuse if and when so required.		2960	7000.00
28-Dismantling terracota jali and removal of its debris away from the monuments.	1210		300.00
29-Dismanling old country brick work in kankar lime mortar. It also includes dismantling, sorting and stacking of useful materials at suitable place and removal of debris away from the monuments.	348224	sft. 24/-	83573.00
30-Add 15% on total cost of the estimate to meet the fluctuation of labour and market rates in view of the nature of items as the entire project is to be completed in five years.			1433637.00
31- Add 3% on total cost of the estimate to meet expenditure of additional staff required for its supervision till the scheme is completed.			32733.31
32- Contingencies and unforeseen items 5%.			566047.69
		Total:-	1187002.00
Improvement of garden			
1- Providing and fixing turbine motor pumping set (KSB) 5"x6", motor 25 H.P. 1440, 400 volts complete in every respect with 10" dia bore including construction of chamber and other overhead charges etc.			Rs. 70000/-

	Amount
2- Providing and extending G. I. Pipe line in the third terrace lawns and also interconnecting with the layout of pipe line of 2nd terrace.	Rs. 60000/-
3- Provision for improvement of lawns of the three terraces i. e. returfing of grass clods, manuring, plantating of trees, and different kinds of fruit plants. This amount also includes the cost of constuction of boundary wall on the west side of the nursery to control the entry of undesirable trespassers Total area of lawns. 8,10,000 sft.	Rs. 200000/-
4- Add 15% on total cost of the estimate to meet the fluctuation of labour and material rates in three phases.	Rs. 49500/-
	Total:- Rs. 379500/-
5- Contingencies and unforeseen items 5%.	Rs. 18975/-
	Grand Total:-Rs. 398475/-

Acquisition of land

1- Provision for acquisition of land as shown in the plan around the perimeter wall of the garden in order to keep the exterior view of wall open for the visitors. 337 Kanals	@ Rs. per Kanal 25000/-	Rs. 8425000/-
2- Provision for the improvement of the acquired area such as development of lawns, providing of walk ways, and enclosing the area with barbed wire fencing with R. C. C. posts on all the three directions, North, East and West.		Rs. 300000- Total:- Rs. 8725000/- Rs. 436250- Grand Total:-Rs. 9161250
3- Contingencies & unforeseen items @ 5%		

Illumination of 2nd & 3rd terraces

1- Provision for illumination of the 2nd & 3rd terrace like the first terrace.	Rs. 600000/-
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Summary of the cost

1- Conservation of the structures	Rs. 11887702.00
2- Improvement of the garden	Rs.398475.00
3- Acquisition of land and its improvement.	Rs. 9161250.00
4- Illumination of 2nd and 3rd Terrace.	Rs. 600000.00
	Rs. 22046726.00

Say Rs.-: 2,20,46,726/-

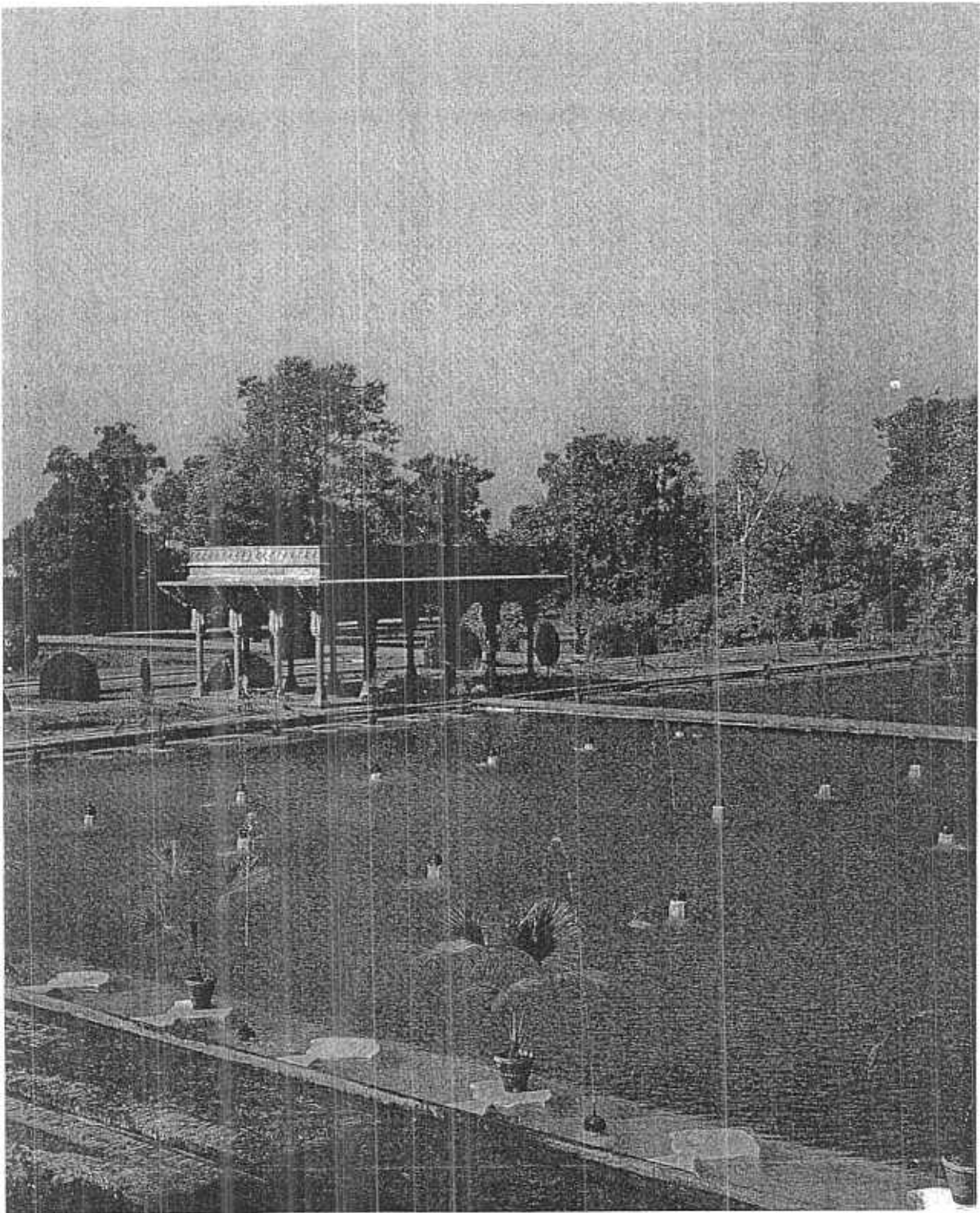


Fig. 3. Central tank and red sandstone pavilions of Shalamar Garden.

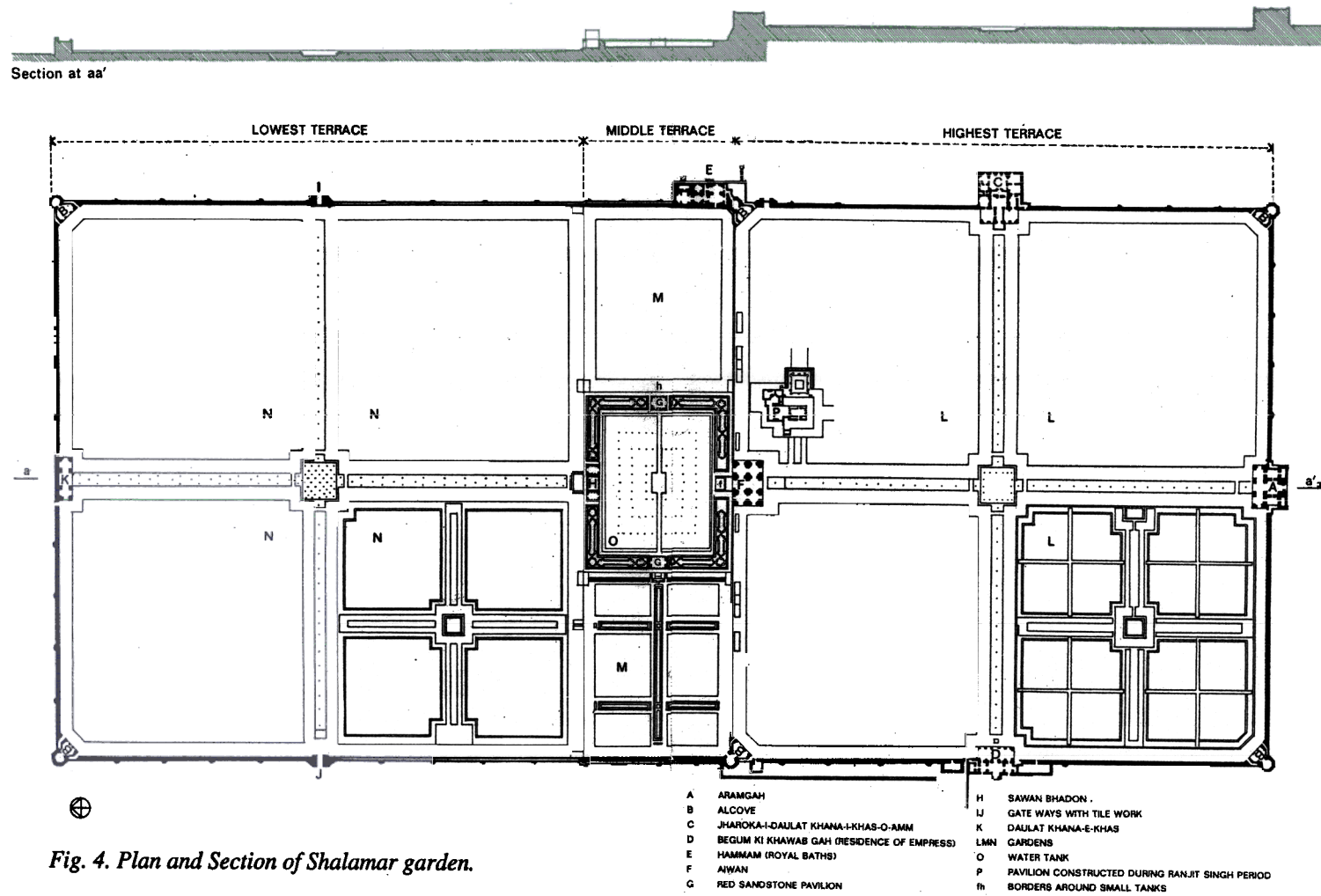


Fig. 4. Plan and Section of Shalamar garden.

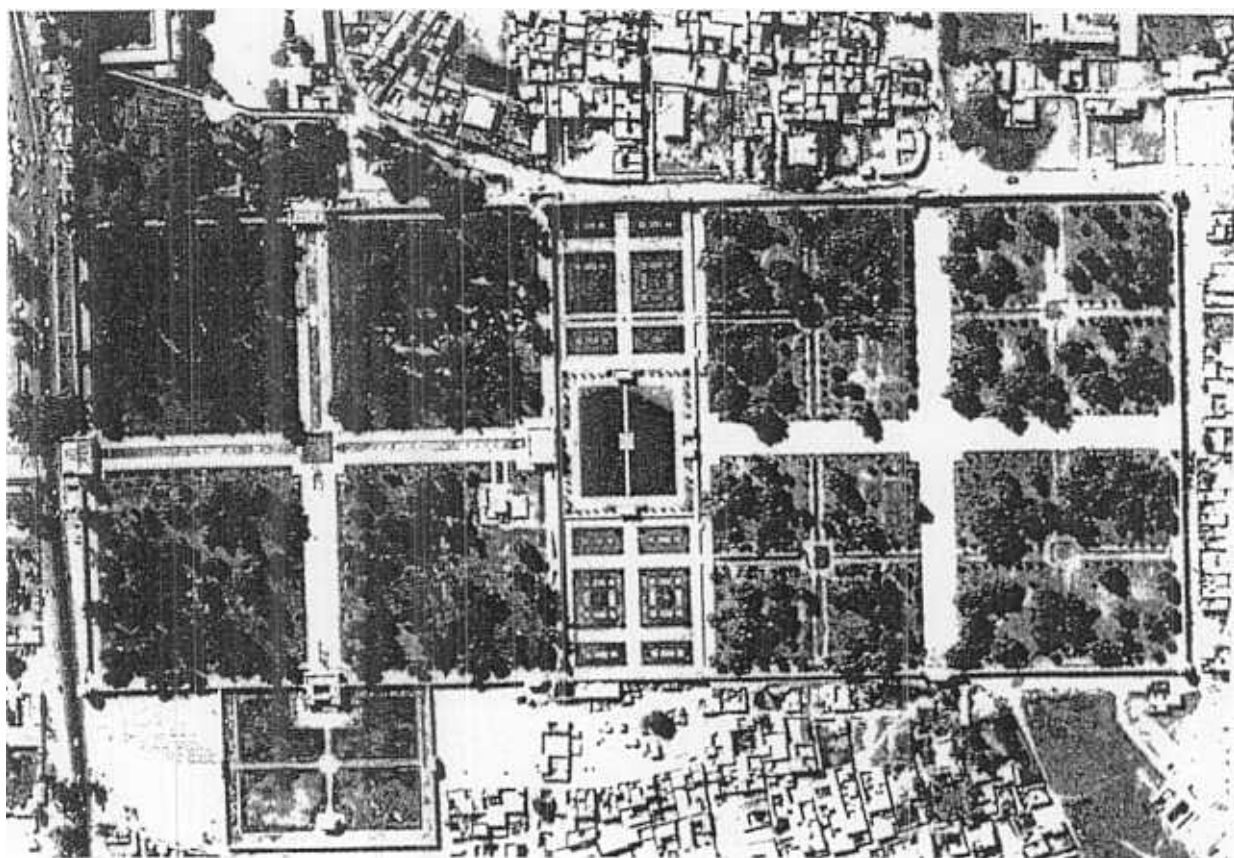


Fig. 5. Aerial view of Shalamar in 1987.

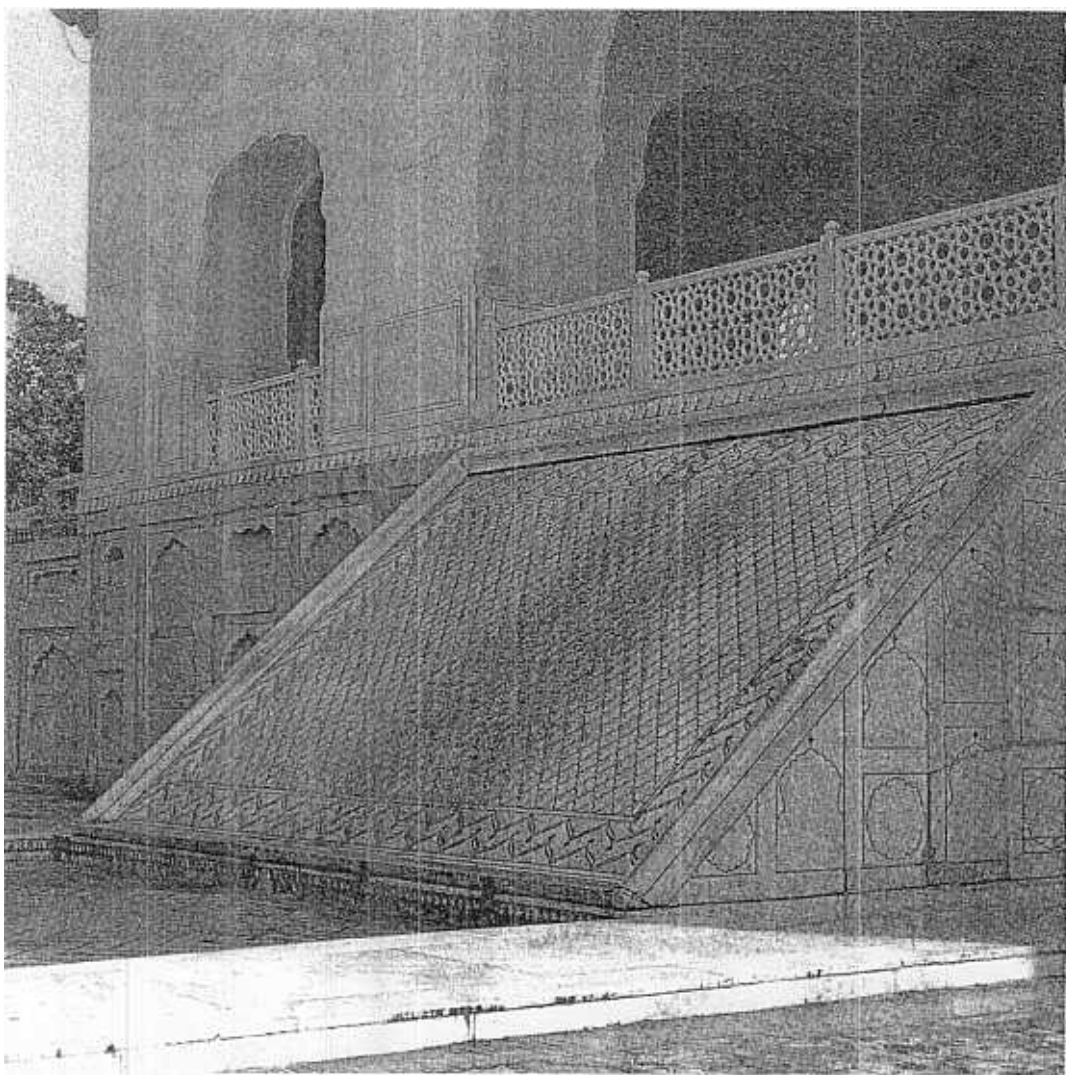


Fig. 5. White Marble Chadar (cascade)

Fig. 6. Tile-mosaic decoration from the main gateway of the garden.

