



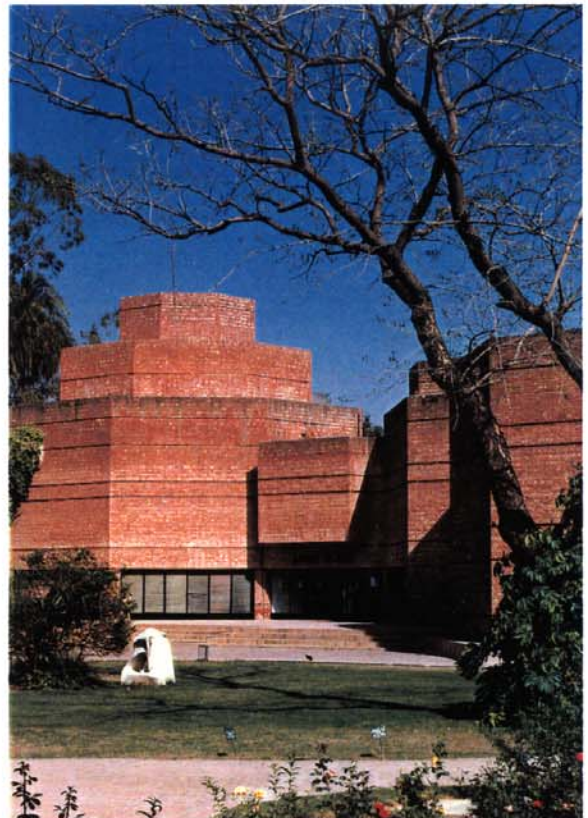
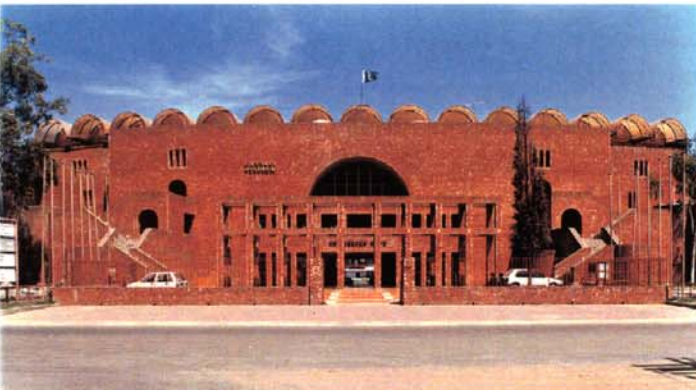
1998 Technical Review Summary

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by Omar Hallaj

Alhamra Arts Council, Open Air Theatre and Gaddafi Stadium

Lahore, Pakistan



Architect

Nayyar Ali Dada

Clients

*Lahore Arts Council
Pakistan Cricket Board*

Design

*Alhamra Arts Council 1976-1989
Open Air Theatre 1990-1991
Gaddafi Stadium 1993*

Completed

*Alhamra Arts Council 1979-1992
Open Air Theatre 1993
Gaddafi Stadium 1995*

I. Introduction

The nomination covered in this report consists of three distinct parts. The first part is the Alhamra Arts Council in Lahore. This part of the nomination was carried out in four phases, but all the elements of this part are located on one site. The second part, an open-air theatre complex, is an annex to the first project, yet it is located on a different site. The third part is the renovation and expansion of an old stadium located on the same site as the theatre. This last part is commissioned by a totally different client and serves a completely different programme.

The same architect designed all three parts, and though they serve different functions, they share several common architectural issues. It is therefore reasonable to consider them for a single nomination. However, as the jury may decide that some parts of this nomination should be considered separately than the others, this report will present separate building information for each part. Therefore each part will be described independently. Nonetheless, at the end, the reviewer's appraisal of this nomination will again try to evaluate the architectural issues common to all three parts combined.

II. Contextual Information

a. *Historical background*

The city of Lahore is an ancient urban centre. It was one of the major cities of the Mughals in the 17th century. Its location as an important crossroads in the northern Punjab brought riches as well as invading armies. As a result the city cultivated a rich architectural heritage that reflects the political fortunes of its conquerors. The modern city of Lahore, however, is organised along a pattern set mostly by the British during their approximately one hundred years of colonial rule over the Indian sub-continent.

When the British left the sub-continent in 1947, Pakistan emerged as a new country that lacked many of the essential components of statehood. Its past fifty years have been a constant struggle to establish modern institutions and civil-society organisations.

Today Lahore has almost seven million inhabitants plus innumerable migrant workers from the surrounding small villages. Its precarious location between the Ravi River to the West and North and the Indian border to the East forced the city to grow mostly Southward. The city's reputation as a major cultural and educational centre can hardly account for the 4.5% growth rate at which the city has been growing. Industry and commerce are taking over the city.

b. *Local architectural character*

Traditionally Lahore cultivated large suburban gardens and garden palaces around which small urban villages sporadically grew. Today, particularly along the main axis of the city, this low-density urbanisation is still evident. Gardens and green areas separate the built-up areas from the main streets. However, in the areas left between the streets temporary neighbourhoods grew. These mostly squatter settlements, known as *katchi abadi*, became permanent fixtures of the city. Therefore, it is very typical to see low-income pockets appear adjacent to the highest valued real estate.

The Mughal presence in the city has left strong stylistic imprints. However, the Mughal influence is complex. Early Mughal architecture used brick and polychromatic materials, whereas late Mughal works used plain white marble. In both cases the architecture of that culture maintained a critical balance between the massive structure and the light and transparent screen partitions. Axiality and symmetry are two very important organising factors.

Later Sikh presence in the city created a series of colourful and ornate temples. The British used both Mughal and Sikh motifs on the façades of important state buildings, but they invariably used floor plans that were alien to the local architecture and reflected the British bureaucratic concerns of the time. The postcolonial period witnessed two main streams of architecture. The first was International Style architecture, heavily influenced by the work of Le Corbusier and then by the Brutalist style of the 1960s. The second continued the colonial tradition of mixing modern planning concerns with orientalist façades.

The city also developed rich vernacular traditions that tried to replicate certain local motifs using modern building materials. The result is a hybrid texture with no one particular, prevalent style but rather a mixture of mannerist and eclectic effects. The latest fads of post-modernism are but the last introduction into the arena.

c. *Climatic conditions*

Lahore is generally hot and dry. The winters are short with temperatures rarely below freezing. Fall and spring are short and summer is generally very hot and long, with temperatures in the 40s °C (110°F). The dry climate is offset by the many canals in the area.

Part 1: Alhamra Arts Council, Lahore:

a. Site context

The site of the Alhamra Arts Council is located on a corner of the old Mall Road of Lahore, now known as the Shahrah Quaid-e-Azam, after Pakistan's founding father. The Mall was laid during the colonial period to connect the city centre with the military cantonment to the Southeast. One end of the Mall is commercial, dotted with large, brick, state buildings with a hybrid mix of 19th-century British Neo-Gothic and the local Mughal traditions. The other end, further from the city centre, is loosely built up and characteristic of the grand boulevard tradition of the last century.

Though its original layout was mostly suburban, with important governmental buildings, statesmen's residences, and gardens, the street is now centrally located. It is used as a major thoroughfare on the way to the city centre, yet it still preserves a ceremonious character. City residents stroll up and down the Mall on summer evenings and holidays, as some of the most popular open-air facilities are located along this stretch.

The first phase of the project consisted of a large octagonal mass set back from the Mall Road and from the side road, separating it from the luxury international style Avari Hotel. By sitting back from the street, the building keeps with the character of the Mall Road. The buildings on the Mall were mostly designed with large gardens set back from the street. However, unlike the walled structures of the Mall, the Alhamra theatre is surrounded by a light wrought-iron fence. An open paved platform extends in front of the mass. This gives a strong visual presence to the built form on the corner of a street that is otherwise aligned with gardens.

The theatre is the only part of the project visible from the Mall; a public garden hides the rest of the site. The successive phases of the project created several octagonal masses surrounding a large open court in the middle. At the rear of the site, an oblong building that houses an art gallery marked the southern side of the opening (phase 2). North of the court a smaller theatre was added behind the other theatre, to share the same backstage facilities (phase 3). To the East, another building houses a small lecture hall and administrative offices (phase 4).

Only phase one is accessed directly from the mall. The other phases are accessed through the central court. To access the court a narrow road curves by the theatre behind the public garden. Therefore, the court is perceived as a hub at the centre of the complex and it serves to bring all the parts of the project together. The architect inadvertently recreated an open-air congregation area that brought the artists and intellectuals of the old Alhamra together.

The landscaping of the grounds has changed over the years. Small platforms extend out from the side of the buildings. Cypress trees along with other kinds of trees were used, perhaps in a subtle reference to Mughal gardens. When the central part of the court was covered with grass, the trees and plants were moved to planters on the perimeter. This left ample space for people to move around and rest on the grass and the paved areas.

b. Site topography

The city of Lahore is mostly flat as is the complex. The only subtle changes of grade are artificially created to move up and down between entrance levels.

III. Programme

a. *Conditions of programme formulation*

The site of the council was on a plot that belonged to an absentee landlord (the government of Pakistan appropriated the plot after the 1947 post-independence strife). The site was donated by the state to Alhamra, a small new non-governmental entity focused on arts. For years, this arts group used a small hut to hold most of their activities. As the activities of the Alhamra grew, small temporary buildings were added to the site. Activities were often held in the open air. The site soon acquired a cultural presence in the country.

Several architects were consulted in building a more permanent building for the council. However, it was a young local architect who was finally chosen for the task. A series of phases planned the growth of the site. The first phase was to be a large theatre. As the first phase was brought to completion, the society had a conflict as to the ownership of the site. Finally, it was resolved that the society would be taken over by the state. The various other phases were carried under the auspices of a government-controlled body called the Lahore Arts Council. This body is comprised of government officials as well as artists from the community.

The structure of the Council was later emulated for other Arts Councils in Pakistan. A hierarchy of administrative divisions was developed. The Lahore Council for instance is a regional council responsible for arts activities in smaller district centres as well.

The state was not always in favour of supporting the arts and at times governments were even antagonistic. However, the first phase was carried out with the support of an enlightened governor and various individuals who had moral and political clout in the city. The subsequent phases were less controversial as funding from the state had been established.

b. *Objectives*

There is no one single programme objective for this project as it grew over a relatively long period of time. However, initially, the establishment of adequate facilities to accommodate the arts was a clear necessity. Lahore is a large city and the council is still one of the only venues for the performing and visual arts.

The architect was closely involved with the council from the very beginning. He helped to formulate a programme for the growth of the council. This programme was adapted as the master plan. Though many of the programmatic concepts were modified throughout the years, the phases of the project were carried out. The architect helped to maintain the organisation of spaces as programmatic priorities changed to reflect the administrative directives throughout the years. The buildings proved to be adaptable enough to accommodate the many changes in programme.

c. *Functional requirements*

Phase one required a large theatre (for 1'000 people), with a proscenium, backstage, and ancillary functions. Phase two was developed as an art gallery and classrooms although some of the rooms in this building were later used as administrative offices. Phase three which has a small theatre (for 450 people) reflects the popularity of the Alhamra as a site for the performing arts. This new theatre shares the backstage facilities with the other theatre on the site. It also provides for many of the services and maintenance for the two theatres. Phase four established a small lecture hall that can double as traditional music hall (for 250 people), along with administrative offices and practice rooms.

The site also includes some other small structures: bookstore/canteen block, mural, water tower, and

guardrooms.

IV. Description

a. *Project data*

The basic octagonal forms resulted from acoustic studies. In contrast, the fly spaces of the proscenium required a large rectangular mass. Also, the connections between the buildings were designed as simple rectangles. Therefore, the general look of the complex is that of large octagonal masses interspersed with rectangular connections.

The various phases of the project occupy 8'086 m² of the site, for a combined floor area of 13'848 m².

Phase 1:

The first phase consists of a large slightly elongated octagonal structure. The walls of the octagon are inclined inward. At the corners, the massive red brick walls are separated and vertical bands of glazing are recessed between the wall segments. This alleviates the massive look of the structure. The proscenium is topped by a massive solid fly tower. This structure is softened at the edges by chamfering at its corners. Two smaller octagonal structures are located on the two sides of the fly tower. They too have tilted walls and glass bands at the joints. They serve as backstage facilities. Another smaller rectangular structure in the back houses rehearsal rooms, services, and maintenance areas.

Public entry to the auditorium hall is from the front. At ground level a large lobby doubles occasionally as an art gallery and accommodates the two large but simply detailed stairs leading up to the audience seating area. The lobby is partially tucked under the seating area; therefore, the ceiling has a powerful structural presence within the space.

The audience seating area is accessed at mid level. It immediately reflects the octagonal shape of the building. The stage protrudes beyond the proscenium and has a strong presence within the space. The wood ceiling provides the only hard surface as opposed to the soft fabric covered walls and carpeted floors. The arrangement helps with the acoustics and it exaggerates the strong presence of the roof.

The backstage areas are accessed from the court side. A long double-loaded corridor runs by the actors' dressing rooms. Large shops for preparing set designs are shared with the smaller theatre's backstage.

Phase 2:

This phase is comprised of four equally-sized octagonal structures that are symmetrically arranged along the central axis. The top level of this building is an art gallery that can be accessed on ground level on either side of the octagonal structure. The ground level of the two octagons houses administrative offices and is accessed through a central door. A small spiral stairs is located along the entrance axis in the back.

The art gallery is divided into a series of successive spaces according to the volumes of the octagons. Part of the space is intended for arts classes when no exhibitions are held there. Side stairs lead to a mezzanine, the mezzanine connects to two exhibition spaces in the two central octagons. There a small stair leads to a balcony. The only light source is through light shafts in the ceiling. This whole composition gives the feeling of a lighter structure as one moves through it.

Phase 3:

A small auditorium is attached on the court side of phase one. The two make for one large extended structure. The octagon is accessed from the court. A large recessed metal door was meant as the primary entrance. However, for security reasons, a smaller side door that opens to the court is used. This mass is treated similarly to the large theatre. Slightly inclined walls are separated at the corners to allow for vertical strips of glass. The lobby is a small replica of the large theatre. Only the stage is different. It is entirely contained under the proscenium. Behind the stage a corridor links the two theatres and their common back-stage facilities and rehearsal rooms.

Phase 4:

This phase is set in the rear of the site. It houses a small auditorium for lectures and traditional music performances. The main structures are two octagons, the one to the East houses the auditorium and is slightly larger, while the one to the West houses offices. A simple mass connects the two with a sculptural staircase set in a small octagonal space of its own. Another small octagonal mass acts as storage for the auditorium in the back.

Entry to the auditorium is through a large metal door that is slightly recessed into the red brick wall. The ground floor lobby is also simple and its ceiling reflects the inclined seating area above it. A simple staircase leads to the upper level of the auditorium which is small compared to the steep incline of its floor. The octagonal shape of the hall is also very apparent in this space. The space could be interpreted as either intimate or claustrophobic.

A small lobby to the East leads to exterior stairs that lead down to the front of the building at court level. These stairs make for an interesting sculptural feature on the surface of this structure, however, their use is secondary.

The top floor of the office area is an open plan office. A balcony overlooks the lobby below. The top floor is accessed through the spiral staircase in the back. The staircase also leads to the basement used primarily for music training and recording studios. The studios have not yet been put to use.

b. Evolution of design concepts

Though the complex evolved over a period of 15 years it has managed to retain its basic design concepts. The architect started from the idea that the octagon is a shape that works well with the acoustic requirements of the performance arts. This shape was used in various possible combinations. Sometimes it was used as a solid mass while other times to soften the massive scale of the theatres by separating the walls at the corners and inserting glazed vertical strips.

Another basic idea that is at work is the idea of using solid red-brick walls. The architect, famous in his earlier works for using concrete surfaces, chose to work with a more traditional material. Red brick is the main building material at the Lahore Fort and Badshahi Mosque, the two most important historic buildings in the city. It is also the material that the British came to realise was the best suited to reach a compromise between their neo-Gothic buildings and the local building practices. Most of the institutional buildings at the beginning of the old Mall Road are red-brick buildings.

The slight inclination of the walls is reminiscent of the Lahore Fort but it is less intimidating in Alhamra. The inclination of the walls subtly widens the sky dome and allows the court to be perceived as an open space rather than a walled-in area. The inclinations of the walls also help to distinguish the building from the Mall road. The absence of a fence would have made the solid wall of the theatre at odds with the suburban nature of the Mall.

The use of solid walls and the absence of windows are indicative of the functional requirements of the theatre. Nonetheless, narrow vertical strips of windows bring just enough light to the lobby areas to lighten the mass of the structure.

The architect also chose to keep ornamentation to a bare minimum. The red brick is occasionally interspersed by horizontal bevelled courses. The two iron doors of phases three and four are the only elements of the complex that have any ornamentation.

c. *Structure, Materials, Technology*

The buildings of Alhamra are made of cast-in-place concrete with a handmade red brick fascia with traditional local mortar. The structural concrete used in the roofs was left exposed on the inside. The theatre halls are covered with steel trusses, light tin sheet roofing, and special acoustic treatments of exposed wood or plaster. Walls were simply painted again with the exception of the theatres that required an acoustic fabric.

All the materials used in the project were locally available and abundant. The budgetary constraints required that the least expensive materials be used. The architect, who anticipated that a public agency would be unlikely to perform regular maintenance, chose very durable materials that require little maintenance.

The only challenge for the contractors were the inclined walls. Vertical reinforced concrete buttresses were used inside the wall to support the inclined walls, along with steel pipe scaffolding and steel plate shuttering. Otherwise the projects relied on available technologies.

The only building material that did not fare well in this project is the roof insulation. The project had a serious leaking problem until funds were allocated and a bituminous insulation was recently added.

All the consultants and contractors were local enterprises, as well as the majority of the labour force.

d. *Origin of technology, materials, labour force, professionals ???*

V. Construction Schedule and Costs

a. *History of project*

Phase 1:

Design Phase: 1976–77
Construction: 1977–79
Project Occupancy: 1979

Phase 2:

Design Phase: 1980
Construction: 1982–83
Project Occupancy: 1983

Phase 3:

Design Phase: 1983
Construction: 1984–85
Project Occupancy: 1985

Phase 4:

Design Phase: 1989
Construction: 1990–92
Project Occupancy: 1992

b. Total costs and main sources of financing

The total costs of all phases is about PKR 57'000'000 or about USD 2'000'000. This roughly translates to about USD 142 per m². However, this figure is slightly misleading as inflation costs and exchange rates were not always constant during the long span of the construction. Some later expenses were accrued for equipment. The construction price is comparable to typical institutional contracts that were conducted at similar time intervals.

Funding for the project is public and provided for by the local government. The local government is also responsible for maintenance of the project. Maintenance costs are variable and left to the local administrator's discretion. Maintenance is performed on an as-need basis; therefore it is rather difficult to estimate the exact amount spent thus far.

VI. Technical Assessment

The main requirements of the project are adequately met by the design. Theatre acoustics are very adequate as well as lines of sight. However, the theatre areas tend to be more acoustically dead than alive which means that they operate well for speech but not as well for music. The galleries have received two different responses from people who have exhibited there. Some thought the lighting was superb while others had mixed feelings. In general the light levels in the galleries are different between the periphery and the centre of the spaces due to the light shafts in the ceiling.

The project is an intensively used site. The use of simple materials that require little maintenance have fared well with the intensity of use. The project is marred, however, by poor maintenance by the state, which assumed its responsibility soon after the construction of phase one.

Leaking roofs were a problem in some parts of the project. Also, underground water seeping into the walls creates some humidity problems along some of the back sections of phase one and in the basement of phase four. Parts of the basements were flooded once and humidity has lingered there ever since. These problems are due in part to the shortage of funds to install proper insulation in the first place as well as the neglect of routine maintenance for drain pipes and roof insulation.

One serious problem that concerns the technical functioning of the site is the difficult accessibility for the handicapped. The problem is manifest by the various changes of grade required to access the facilities as well as the lack of ramps and railings. This was particularly noticed when the old *ustads* or traditional music teachers had difficulty entering the auditorium for traditional music performances. There are no codes in Pakistan for accessibility and public awareness of the issue seems to be otherwise non-existent.

The building interiors require mechanical environmental controls. But in general the red brick creates an ample air space as it inclines onto the concrete buttresses. This provides good insulation for the hot weather of Lahore. Lighting devices for the auditoriums are typical stage lights, however, they are very basic. Exterior lighting of the site is dim and is not adequate for the evening performances. The architect did provide exterior lighting schemes but the administration has not been willing to fund them.

In general the project proved able to change over its life span. The arrangement of the site is indeed very accommodating for the approximately 3'000 people that use the place daily. The provision of the open court in the midst of the project has created a large congregation area and functions as a circulation device. The court seems to absorb people as they come in from the main gate or the side street gate. By contrast, the front platform in front of the main theatre is bare and rather undefined; people pass in a hurry to their destinations.

The project has kept with the formal frontage on the Mall in terms of the scale of the building, the set back from the street, and the use of the brick. However, the unusual shape of the masses is immediately indicative of a different function. The smaller masses inadvertently pull the visitors inward into the court where it becomes less formal.

This attitude towards the open air is by far the most powerful design feature of the project. The contrast between the formal frontage to the Mall road and the intimate scale in the central area works to attract people toward the central court which is surrounded and interrupted by masses of various scales. The massive walls are tilted backward to lighten the effects of the mass. The introduction of glazing at the corners helps this as well.

VII. Users

Two types of activities take place there. On the one hand the place provides a forum for artists to present their work. On the other hand the state has decided that the place should be rented out commercially. Another type of use, although less frequent but important symbolically, is for state functions. Therefore, the project accommodates a heavy schedule.

Commercial theatre groups have to book the main theatre at least six months in advance. The smaller theatre is less heavily booked. However, both theatres accommodate two performances a night to full audiences. The types of performances tend to be comedies. Non-commercial performances are also conducted in the theatres but are less frequent. The commercial activities charge on average more than five times the ticket price of the non-commercial events.

The galleries are used mostly for artist exhibits, school and college student exhibits, and conventions. They are sometimes rented out to commercial fairs that have some connection to the arts (for instance, photography equipment fairs).

The small auditorium functions mostly for traditional classical music, which attracts a considerable audience. However, this auditorium is not as heavily booked as the theatres. Small practice rooms are occupied on a regular basis with students and their *ustad*.

Most events use the spaces in a conventional manner. Some artists complained about the inadequacy of the buildings for their kind of art. Hence they tried to reorganise the public areas or the galleries according to their particular uses. Special events like a performing art festivals by rural women were quite successful at engaging all parts of the site in their work, but events like that are rare.

Also, as part of its activities the council envisioned a puppet theatre for children. A basement

underneath the rehearsal rooms of the theatres was converted for this purpose. Weekly performances are held in front of 100 children at a time.

In general it is safe to say that the site accommodates several thousand users per day. The events are considerably different in quality. But the place is always busy and the court is occupied by visitors from the early afternoon onward. People come from all walks of life. The most popular events: the commercial theatre performances attract lower-middle income groups, whereas the non-commercial events vary in their appeal. People seem to be quite at ease while strolling along or sitting in the court, vendors of all kinds gather at the front, as they can count on ample clientele.

The response of the users can be hard to evaluate; most people are more attentive to the events rather than the space. Most people I encountered recalled the particulars of special events. Professionals were divided in their opinion. Most of the people who worked in the theatre were pleased with the space, whereas the people who work in the visual arts and music had some complaints about the adequacy of the spaces for high quality art events.

VIII. Persons involved

- Architects: Nayyar Ali Dada
- Assistant Architect: Tanveer Hassan
- Owner: Alhamra Arts Council
- Structural Engineer: Shahid Hameed
- Electrical Engineer: Mohammad Ibrar
- Contractor Phases 1 and 2: Builders Associates (Pvt.) Ltd.
- Contractor Representative Phase 1 and 2: Massoud Siddiqui
- Contractor Phase 3: AFCO Builders (Pvt.) Ltd.
- Contractor Representative Phase 3: Sami Khan
- Contractor Phase 4: Advanced Building Systems
- Contractor Representative Phase 4: Arshad Chughtai

Part 2: Al-Hamra Open-air Theatre, Lahore:

a. Site context

The site of the Open-Air Theatre is about 5 km away from the main site of the Alhamra Arts Council. It is built on a plot of land allocated by the state for sporting events. Several stadiums and playing grounds are built there; some other facilities were planned but not constructed there. The site was set in the 1960s to the South of the city centre. Its choice reflects the city's expansion Southward, as it is accessed from the side of a major Southward avenue heading to Model Town.

The neighbourhood in which this large plot of land is located is an upper middle-class residential area. Most of the buildings in the neighbourhood are detached houses. Along the main roads, multi-level commercial buildings with ground-level shopping facilities have become common features in the last few years.

Within the site, a main street runs along the plot, and the grounds are divided by side streets. The open-air theatre occupies the western end of the plot; Gaddafi Stadium, a cricket stadium rehabilitated by the same architect, is just to the East. On the opposite side of the street the plot is left open where informal youth groups gather to play cricket. Further North on the opposite side of the road is a large concrete hockey stadium. A smaller stadium is located further north for local games.

The open-air theatre is set away from the two streets by a large plaza along the main street and a green lawn along the side street. Originally the plaza was open, but security concerns led to the construction of a light iron fence along the street front.

The plaza in front of the stadium is paved with square patterns of stone with red brick in the middle. A series of columns set in front of the building point to its main entrance. As the building is circular in plan the columns help to establish the front. The two sculptural stairs set symmetrically on the outside of the building also help to fix the front.

Entrance to the theatre is through the two exterior stairs. Ticketing windows are set underneath the stair masses. Also underneath the stairs are the entrances to the two small auditoriums located under the seating area of the open-air theatre. The front part of the ground level is an arcade with stores and other commercial activities (less than a quarter of the space is currently occupied), whereas at the rear, only service doors interrupt the mass of the building.

A small square building meant as an art gallery is set at the north end of the theatre plot. This building is officially not commissioned, though it is already being used for informal art exhibits. This building is also fronted by a series of columns. Also a water tower and small service rooms are located on the edges of the plot.

b. Site topography

The site is flat, as is typical in the city of Lahore.

III. Programme

a. Conditions of programme formulation

The popularity of the performing arts facilities on Alhamra's main campus was hindered by the problem that the large theatre could not accommodate more than 1'000 people. Larger events were not possible. Also, due to the heavy scheduling of the theatres, it was thought to expand the capacity of

the main campus. However, as the original site was not expandable, the Alhamra benefited from its public status and obtained land from the state at the new location.

b. Objectives

The project was meant to provide a large open-air theatre for large cultural activities. The spaces underneath the main seating area were planned as lecture halls. However, as the popularity of commercial theatre has proved to be great, the two large spaces were made into small theatres.

The commercial activities on the ground level provide financing for the building. It should be noted that most stadiums in Lahore use the ground level to house small retail facilities and major shopping areas are named after the stadiums that house them. In this case, the open-air theatre is treated as if it were a sports arena.

c. Functional requirements

The open-air theatre was meant to have a seating capacity of 4'500, backstage facilities, two smaller theatres/auditoriums (350–400 people), retail spaces, restrooms, VIP lounge, and rehearsal areas.

IV. Description

a. Project data

The basic mass of the building is cylindrical. The diameter of the building is 67 m, and its height is 14.5 m. The total floor area of the ground floor is 2'787 m² and the total combined floor area is 3'530 m².

The exterior of the building is made of red brick interspersed with courses of decorative patterns made of ceramic tiles or bevelled bricks. Small pairs of windows that bring light to the upper level passages make another horizontal pattern on the wall. On the parapet level, semi-circular arched openings run along the top of the wall. The building therefore, has a horizontal composition.

On the ground level the building accommodates retail spaces in the front. In the rear there are the rehearsal and backstage facilities. Also, the space underneath the seating area on the east side of the building was used as an auditorium/theatre, whereas the smaller rehearsal space to the west is used as a small theatre. The two spaces benefit from the inclined seating structures above for a dramatic ceiling effect.

The stairs on the sides lead to two foyers, one on each side of the building. A passageway runs along the outer perimeter of the building and leads to offices, other arena entrances, and restroom facilities. Each foyer has an internal stair case that brings people to the top seating areas as well as down to the ground level to facilitate exiting the building. Arches frame the two staircases and the whole red brick composition creates a sculpted enclave next to each foyer. Underneath the top seating areas of the theatre is another level of offices.

The arena of the theatre is primarily hexagonal in shape. The transfer from the circular envelope to the hexagonal stage engendered two types of circulation patterns: one that runs radially from the centre to the periphery and the other runs parallel to the sides of the hexagon. The overlap of the sides of the hexagon resulted in the location of some seating sections slightly off from the centre. This helps to lighten up the effect of the centrality of the composition, by accentuating slightly oblong lines of sight.

Seating surrounds the stage area on all sides. However, on the north side the front seats were removed to suggest a backdrop. The retaining wall that replaced the seats is about four meters high.

b. Evolution of design concepts

The arena concept of this building is a direct reference to what the architect perceived as old Greek and Roman theatres. The local theatre traditions, usually made up of itinerant groups, did not establish enduring building types as they performed mostly in tents and other temporary locations.

The basic design premise starts from the functional requirements of sight lines and acoustics. As the arena was to accommodate an audience of 4,500, seating all around the stage provides close range visibility for the maximum number of viewers.

However, several other design features are typical of Nayyar Dada. The design works to balance massive architectonic elements with subtle axial shifts. Also, the architect separates large masses at their joints in order to bring light into the composition. For instance the arcade on the bottom and arched opening at the top exposes the solid wall as an envelope for some type of large open space inside.

In stark contrast to his earlier works the architect directly borrowed many themes from traditional Mughal architecture. The ceramic tiles amidst the courses of red brick are particularly evident in the early parts of the Lahore Fort and the mausoleums of Multan. Also the round building envelope is typical of that era. The use of arches and freestanding columns all contribute to that architectural reference.

Particular attention has been placed on the sequence of space leading to the arena. The exterior stairs, gateways, foyers, interior staircases, and top-level passages are part of a carefully scaled and detailed spatial sequence. The use of brick throughout the whole sequence works to amplify the materiality of the arena made mostly of exposed concrete. Therefore, by differentiating the use of materials in this particular way, the design sets the arena and its stage as the focus of the design. The circulation becomes inadvertently part of the building envelope. Thus, what seems to be a very simple exterior image, translates experientially to a complex and rich process.

c. Structure, Materials, Technology

The main building has a reinforced concrete column-and-beam structure with handmade brick infill and red-brick cladding with traditional red *surkhi* mortar. Brick courses are interspersed with decorative ceramic tile courses. The flooring is made from terrazzo. In the seating area strips of brick mark the edges. Walls in the public areas were left as exposed brick, while in the service areas, painted plaster is the finishing material. Ceilings reflect the structure of the seating area above and are left in exposed concrete. The only exception is the acoustic plaster used in the auditoriums.

All the building materials are locally available, as is the local labour force needed for the construction.

V. Construction Schedule and Costs

a. History of project

Project Commission: July 1990
Design Phase: August 1990–February 1991.
Construction: May 1991–April 1993
Project Occupancy: August 1993

b. *Total costs and main sources of financing*

The total cost of the project was about PKR 15'700'000, or the equivalent of USD 520'000. This roughly translates to about USD 147 per m². This type of expenditure is typical for average institutional buildings in the area, with the difference being the complexity of the programme of the open-air theatre.

All funding was public as the owner is a public agency. The state donated the land.

VI. Technical Assessment

The open-air theatre provides two rather unusual open spaces: the arena itself and the open grounds around the building. The envelope of the building works mostly as a backdrop for both open spaces. Public events that depend heavily on the proscenium concept of a theatre have not been very successful here. Only the small auditoriums provide for such a space. This can explain in part why the building has not been very popular with commercial theatre groups whereas it became an immediate hit with experimental types of the performing arts.

Large events that take place in this theatre are often festivals that require many smaller spaces and one large arena for the main attraction. The public grounds around the building accommodate the temporary structures needed for this specific type of event. The polychromatic texture of the building blends well with tents, open-air stages, and service kiosks. However, the success of such events is due mostly to the organisers' ability to adapt the site.

State functions often use the space simply because of its seating capacity and the building is not as heavily used as the original site of Alhamra. During the off season the building is mostly empty. The few commercial retail stores on the ground level have not managed to create a critical mass of everyday users. Perhaps if the master plan perceived by the architect is finally adopted the two masses of the open-air theatre and the Gaddafi stadium can create a combined public ground to attract people on a more permanent basis.

The site has inherited a modernist 1960s planning order: massive buildings floating in vast unusable green areas. It is therefore an inherent problem that the site itself undermines the incorporation of the open-air theatre into the everyday life of the city.

The open-air arena works well with Lahore's hot climate, and the idea of open-air performances eliminates the need for environmental controls. The two small auditoriums by contrast require air-conditioning equipment. As their use as commercial theatres was primarily an afterthought the air conditioning units had to be placed in awkward positions. This was done in stark contrast to the fluid treatment of the structure.

The use of brick as the primary material for exterior paving, building envelope, and circulation spaces ends abruptly at the entrance to the arena. The choice of material therefore has created a continuous preparatory sequence. The arena emerges suddenly as a different realm, thus stressing its role as a dramatic place.

The use of brick has also reduced the maintenance problems of the building, though the exposed nature of the structure has left obvious environmental wear-and-tear problems. The ceramic tiles fared well under the elements; however, the decorative patterns marking the entrance gates to the building have not endured as well.

As the architect did not have much of say as to the use of the building, some occupational problems emerged, such as exposed air-conditioning equipment, exposed telephone and electrical wiring, etc. These problems could have been easily avoided with some design intervention.

One problem that was not resolved that resulted from the lack of a proscenium is the stage lighting. Light fixtures are mounted on the back walls where they lack proper protection and mounting gear. Therefore, professional quality lights could not be used. Supplementary lights, mounted on small rods in front of the stage, hardly provide for the stage lighting needs.

Another technical problem with this building is its inaccessibility to the handicapped.

VII. Users

The most popular events that took place in this building are art festivals ranging from experimental theatre, puppet theatre, and dance, to general art festivals that combine the plastic arts with the performing arts. A pattern of using the envelope as a colourful backdrop for the outdoor part of the festivals has emerged. Large banners, mascots, and sculptural elements are regularly used.

The majority of these festivals are international and attract large audiences. Also, the fees charged to rent out the space are rather high for smaller events. The commercial-type comedy groups have only used the smaller auditoriums. Therefore the large presence of lower-middle income audiences is generally less than that of the original Alhamra campus.

Performers see a challenge to their work in this unconventional arena. Special productions of stage sets and backdrops have to be conceived. Some experimental theatre groups meet this challenge in a very creative way insisting on using the surrounding seating arrangement to its fullest capacity. Their performances manage to bridge the great divide that separates actor from audience. Others tried through some stage furniture and the hint at a back wall to recreate a front and a back area on the stage. In general the stage demanded some response on the part of the producers.

The little criticism I often heard regarding some of the technical aspects of the building was often overshadowed by the powerful relationship with the audience that the arena has managed to provide.

VIII. Persons involved

- Architects: Nayyar Ali Dada
- Assistant Architect: Mahmood Farooqi
- Owner: Alhamra Arts Council
- Structural Engineer: Shahid Hameed
- Electrical Engineer: Mohammad Ibrar
- Contractor: AFCO Builders (Pvt.) Ltd.
- Contractor Representative: Sami Khan

Part 3: Gaddafi Stadium Renovation, Lahore:

a. Site context

The site of the Gaddafi Stadium is in the same sports complex as the open-air theatre. It was built in the 1960s on a plot of land allocated by the state for sporting events.

As it currently stands, Gaddafi Stadium is surrounded by a circular ring road that separates it from the rest of the grounds. The open-air theatre stands to the West. The building occupies most of the block on which it stands. A 40-metre band of pavement surrounds the building. The main entrance is to the South. It is clearly marked by a freestanding colonnade. Behind the colonnade a large arched gate marks the entry. Two side stairs, leading to the upper levels frame the entryway. Further on each side two pairs of towers mark side entrances between them. Other side entrances are treated in the same way and are distributed along the circumference of the stadium. The main entrance is also distinguished by a later addition of an iron fence that was added by the management for security reasons. Side entrances have metal railings to channel the crowds into the ticketing areas.

III. Programme

a. Conditions of programme formulation

The Gaddafi Stadium, built in the 1960s was a poorly maintained stadium. It was built with a concrete frame and red brick infill elevation and concrete interiors. Its front entrance was distinguished by the addition on the second level over the entrance of a shading device painted white in a typical international-style manner. Side entrances were marked only by means of white wash. Some refreshment stores were parasitically attached on the exterior.

The stadium gained its name in the early 1970s after a visit to Pakistan by Colonel Gaddafi as part of a non-aligned states convention. The president of Pakistan at the time, Ali Bhutto, honoured his guests by naming public buildings after them. This particular building retained the name ever since.

The idea for renovating the stadium came as a result of the cricket world cup scheduled to be held in Lahore in 1996. The Pakistan Cricket Board, a semi-public agency with state representation as well as elected members, contemplated building a new stadium for the event, however, funds were not amassed and the event was approaching. So, it was decided that the old stadium would be renovated and expanded, thereby cutting down on the expenses and construction time.

The renovation of the stadium also helps to keep up with the spectator demand of the game in the future. Cricket is Pakistan's number one sport.

b. Objectives

The programme required the addition of a gallery on the exterior of the building. This would give the building a new face-lift as well as expand the seating area on top. Also, the building had to be technically retrofitted to accommodate the world cup matches as well as all the ancillary press functions that would take place during the main event.

The addition of light towers was essential for the new demand for night cricket: a condition not unlike the introduction of night football in other places of the world. However, as some games will also be played during the winter season, some sort of a shading system was required.

In all, the objectives of the programme were for a rapid construction method to meet deadlines and

keep up with changing trends of the game.

c. Functional requirements

The seating capacity was originally for 30,000 people with only 15 percent for individual seating while the rest were in tiers. The task of the design was to increase the seating area to 35'000 with at least 60% individual seats (eventually the whole stadium was developed with individual seats).

Visiting and home team chambers, warm up areas, and gym facilities were needed. Also, press rooms for 400 people were called for along with 30 small hospitality rooms. Restrooms and ticketing areas are also part of the programme.

A shopping gallery was added on the periphery of the building. Stores tucked underneath the seating area at ground level needed a small mezzanine, used mostly for offices. The advance rental revenues of these stores provided funds for the construction.

IV. Description

a. Project data

The basic shape of the building is a circular plan of about 260 metres in diameter. The total ground floor area of 53'300 m², of this about 23'234 m² are built, the rest is playgrounds. The combined built floor area is 39'963 m². The average height of the exterior wall is about eight metres.

The perimeter of the building is made of red brick. At ground level an arcade runs along the perimeter of the building and houses retail spaces. The arcade uses horizontal lintels over square posts. Above each opening the design scheme allocated an advertising space for the shops. The windows at the mezzanine level are placed in series of three openings over each opening in the arcade; the middle window is square while the two side windows are vertical. Semi-circular arches puncture the top parapet of the wall. The rhythms of the openings creates a uniform texture over the whole of the envelope.

Two towers mark each entrance. The towers contain ticketing offices and restroom facilities. The towers are solid in contrast to the perimeter of the stadium. The gap in between them is punctured with a large arched gate and several small windows at the top level.

To shade the seating areas a special steel structure was devised. The basic unit is a 20-metre long space frame of a semi-circular cross-section. The frames are supported in the back by concrete columns and covered with fibreglass. The shading covers about 60 percent of the seating. The translucent fibreglass cuts down on the light without creating a dark shadow underneath. The cricket season in Pakistan is in the winter when the combination of shading and diffused light is particularly successful. In the summer the shading would not be very effective, but nobody watches cricket then.

Eight giant light poles provide enough light for night games. A special contract was negotiated with a major electric supply company to provide these lights.

Inside the stadium people enter at ground level and climb to their seats. The seats now cover the entire stadium; they are made of fibreglass. Seating areas are separated by colour and metal fences block off excited fans.

In the four major quadrants of the circle, the seating areas are provided with old cantilevered concrete shading. The main pavilion encompasses hospitality rooms and press rooms on top as well.

b. *Evolution of design concepts*

The architect tried to introduce some traditional motifs to this otherwise very modern building type. As the interior architecture was set in the original concept of the building, the architects work was mostly on the surface. The large size of the building meant that its circular nature would not be as manifest as in the open-air theatre: hence the use of the towers to break the rhythmic openings in the envelop. The red brick surface treatment along with the space frame on top provides a clear contrast and the main imagery for the building.

The arches and openings were thought to be reminiscent of traditional Pakistani architecture though they inadvertently draw on many Georgian precedents. Perhaps this reflects the status of cricket as a game in postcolonial Pakistan itself.

The use of brick as a building material continues the initiative started in the open-air theatre. Its use for the surrounding pavement extends the texture of the building horizontally into the site. The two new projects, the open-air theatre and the Gaddafi stadium, are, in a way, starting to alter the modernist anti-urban attitude of the site. The concept of massive buildings floating in green space proved detrimental. The area was set outside the day-to-day life of the city. The two new buildings are starting to bring pedestrian circulation into the area, as well as daily users.

The architect's master plan for the site would emphasise the pedestrian connection between the two buildings without sacrificing vehicular accessibility. However, the two administrative bodies are still not quite set on the idea of eliminating the edges of their plots.

c. *Structure, Materials, Technology*

The principal structure of the stadium is load-bearing brick walls with reinforced concrete columns and steel sections for the arcades. The seating area is made of stepped reinforced concrete slabs. The infill material is handmade clay bricks and the exterior walls were made of exposed red brick and cement mortar.

The floors of the seating areas are ceramic tiles and the floors of the shops are terrazzo tiles. Interlocking paving bricks were used in the forecourt. Ceilings were plastered.

The space frames were made of steel sections covered with locally made fibreglass sheathing.

All the materials are available locally, however, some of the construction techniques were new, especially the trusses of the shading frames. A special contract was made with the general contractor for their work.

The tight schedules also required a large work force. Three shifts worked around the clock to meet the deadline. This created some management challenges for which the owner hired a separate site management firm. All labour and consultants were local.

V. Construction Schedule and Costs

a. *History of project*

Project Commission: March 1993

Design Phase: April 1993–September 1993

Construction: November 1993–January 1995

b. Total costs and main sources of financing

The total cost of the project reached PKR 222'292'000, or the equivalent of USD 6'174'000. This roughly translates to about USD154 per m². This cost does not reflect the cost of the lighting poles. The cost is about average for institutional buildings. However, this is a renovation project not a new construction. The estimated costs was considerably below the final cost. This is due in part to the fact that the owner decided to increase the seats and shaded areas during the work. The funds were mostly public, however, a considerable advance was obtained from the preleasing of the retail spaces.

VI. Technical Assessment

The Gaddafi Stadium Project succeeded in giving the city of Lahore a new look for its most popular sport. The owners wanted a new image for a venue heavily dependent on spectator demands. The design does satisfy the brief in this manner. It should be noted that the renovation of this building achieved two results. It offered a new facility for the sport and brought life to an area that was neglected as a result of modernist planning directives.

The final image of the building, however, did not have Nayyar Dada's usual balance of contrasts between envelope and mass or interior and exterior. The use of the arches for supposedly historical references was heavy handed. The balance of modern building type with traditional motifs was purely decorative. Traditional motifs are used as surface treatment. The architectonic and spatial references to the regional architecture used in Alhamra are not evident here.

Accessibility to the seating areas is a little problematic. Access stairs are too narrow and the last two rows of seating are entirely inaccessible except by going over the seats in front of them. It should be noted, however, that many aspects of the final outcome were not due to design as much as to the speed of construction and the owners' eagerness to seat as many people as possible.

The shading devices work very well with the winter weather of Lahore. And the lights have managed to introduce a new craze to the game: night cricket. Some changes had to be made in the design to meet new cricket international standards, but those were rather minor.

The project's main success, however, is in starting to weave a new fabric into this large sports complex. Along with the open-air theatre the site is being slowly transformed. Vendors and fans are moving closer to the edges of the site. However, as long as roads and empty grounds separate the distance between the major buildings, this will be a long process! The retail spaces have had a mixed success rate so far. Some of the ones that have remained are part of franchises. However, the idea of retail outlets at the base of stadiums is common in Lahore. Stadiums that managed to balance traffic and car accessibility fared well in the city.

VII. Users

The cricket season lasts about 180 days a year. Of these, the stadium is usually booked for 100 days. However, the importance of the games does vary considerably. In general the place is under-utilised.

Most of the people that attend the games are young and male.

The stadium is also used for some state functions.

Users' response is hard to determine as it is impossible to separate the excitement of the game from the appreciation of the building. It does seem however that for a building that is used for only a small fraction of the year the decision to renovate an old stadium was much wiser than building a new one.

VIII. Persons involved

- Architects: Nayyar Ali Dada
- Assistant Architect: Hassan Reza
- Owner: Pakistan Cricket Board
- Structural Engineer: Shahid Hameed
- Electrical Engineer: Mohammad Ibrar
- Contractor: Al-Ameen Construction (Pvt.) Ltd.
- Contractor Representative: Khaled Khawaja
- Site Engineer: Tahir Khan

Omar Abdulaziz Hallaj
May 1998