

ABSTRACT

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AND TRANSFORMATION

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The essence of a place is constantly affected by the cultural and traditional values that change and evolve through time. These changes take place due to changes in social, political, and religious behaviors and affect the context in which architecture is sited. They not only impact architecture but all streams of arts, music, theater and dance. In India, dance has deep cultural roots and over time has undergone immense transformation. Contemporary dancers have always looked back at the roots for inspiration and advancement in their field. Similarly architecture has the opportunity to be more meaningful by drawing inspiration from tradition. Both the dancer and the architect manipulate spaces, a dancer through the movement of the body and an architect by the design of built forms. Through the design of a Performing Arts Center for Odissi dance in Orissa, India, this thesis investigates how external influences lead to the transformation of these art forms; how inter-disciplinary studies can influence the design of the built form.

DANCE AND ARCHITECTURE: BODY, FORM, SPACE AND TRANSFORMATION

By

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DEDICATION

To my husband Anup, whose love, faith and support kept me going.

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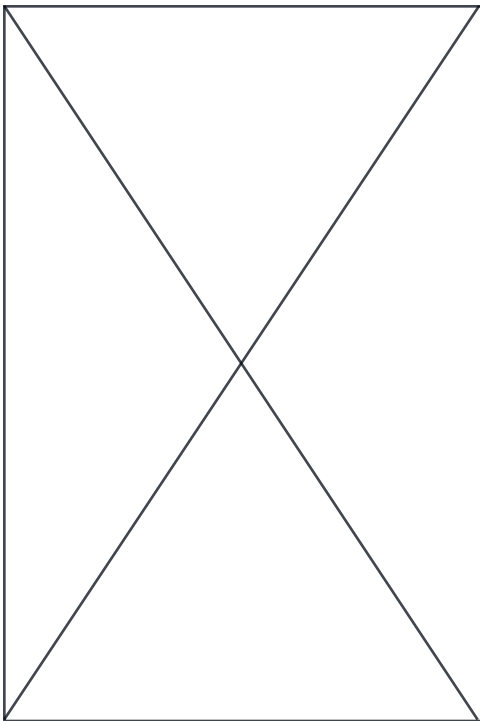


Fig1. Odissi dancer performing on stage

INTRODUCTION

“ The more one thinks about it then, the idea of ‘space’ is neither neutral nor universal: space is a concept underpinned, simultaneously, by historical, geographical, social, political and cultural significations. There is not one space but many spaces, simultaneously intersecting each other, just as there is not one dance and one architecture but a plurality of differently conceived dancerly and architectural endeavours.”

Dance, architecture, spatiality

by, Alessandra Lopez y Royo

INTRODUCTION

Dance history in India stretches beyond 2000 years and has left its traces as ornamentation on architecture, which serve as living museums that have survived through centuries. These Hindu temples not only serve as open books for learning about the history of art and architecture but also trace how dance as an art has evolved through time and its significance in the cultural traditions of the people. This thesis is an exploration of how traditions affect the form and language of dance and architecture. Historically in many parts of India different dance traditions developed in the same way as different architectural styles. Over the years they underwent a similar discourse of creation, proliferation, decline and revival. It is beyond the scope of this project to investigate all dances of India in depth, so the objective is to understand one style of dance, Odissi dance and its transformation parallel to architectural transformation. For Odissi, the origins are embedded in the walls of the temples that provided a place where the different art forms of Orissa originated. They were not only religious sites but also institutions where architects, dancers, sculptors and musicians worked with each other to attain perfection in their art. The purpose of this study is not to imitate the architectural form used in temple architecture but to understand its significance in the development of the Odissi dance style. This analysis will provide foundation to perceive and comprehend the significance of Dance and provide a basis for the argument as to what will be the role of the Performing Arts Center in the cultural context of today.

In the Temple architecture of India the culmination and amalgamation of art and architecture produced a rich cultural expression of the time. Over the centuries the dance form which started as a devotional dance for the Gods has changed and transformed to a performance based one for stages and physically detached from the temple structure. What is seen lacking today is a space that celebrates this transformation of the dance form and allows opportunity for an integrated vision of artistic creation for continuity and change. This thesis will study the forms in dance and architecture in parallel and propose a design to answer the

question as to how will architecture respond the same way as dance does in representing the social condition of art and culture in India today.

“Dancing and architecture both specifically involve looking at issues of boundary, space and time, movement and experimental abstract relationships. Dancers and architects are both also involved with the act of making stable, concrete proposals at the same time as they strive to make sense of the unstable, conflicting and complex social situations in which designs are embedded.” (Bronet, Schumacher)

In the article Design and Movement, Prof. Bronet and Schumacher discuss how dance and architecture become social and cultural denominators. This thesis takes this idea and develops a discussion on the goals for this thesis. Factors such as regionalism, tradition and tectonics will be the generative principles for re-discovering the place for a new architecture. Different examples of buildings will be studied to have a better understanding of the architectural style in India and what factors characterize these changes in

PART-II



Fig2. Sculptures of dancers on the walls of Sun temple, Konark

DANCE AND THE TEMPLE

“The more one thinks about it then, the idea of ‘space’ is neither neutral nor universal: space is a concept underpinned, simultaneously, by historical, geographical, social, political and cultural significations. There is not one space but many spaces, simultaneously intersecting each other, just as there is not one dance and one architecture but a plurality of differently conceived dancerly and architectural endeavours.”

Dance, architecture, spatiality

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THE TEMPLE: *The space for dance in history*

Orissa, a state on the east coast of India has a very unique character of art, music, sculpture, dance and architecture and this unique style is a result of the influence of religion and politics in the customs and traditions of the people over time. Buddhism, Jainism, Hinduism and later Islam and Colonialism impacted the culture of people in different ways and left their visible trace or impression on the soil as landmarks of architecture during various periods in history. The earliest traces of dance can be seen in the Jain cave temples of Khandagiri and Udayagiri from 1st century BC, where carvings of dancing bodies with musicians are depicted on the walls of the cave. Later, Odissi dance, which is the most prominent dance of the state, evolved as a religious ritual within the ambience of the temple structures. The temples depict the prominence of dance in the socio-religious culture of the people during that time. After the 8th century AD there was a spur of temple construction in Bhubaneswar (Fig.3), the capital of Orissa that show how dance had become a part of the religious ritual of the people. The prominence of dance is again portrayed here through rich carving of sculptures on the outer walls of the temples with musicians and other Hindu mythological characters dancing and playing in harmony. There were many customs that were associated with the sacred rituals of the temples and dance was one of them. Between 7th and 14th century the transformation in the style of temple architecture reflected on the spatial composition and how dance



Fig3. Location of Orissa and its capital Bhubaneswar, the "Temple city" in the context of whole country

was accommodated. The evolution of style in temples can be seen how the spaces within them changed from the modest temples that were built earlier in Bhubaneswar to the majestic temples of Konark and Jagannath temples that were later built in Puri. This development reflect how the space for dance changed over the years.

Temples in Orissa fall under the Nagara style of temple architecture. In the earlier temples there were two chambers (fig.4), the main shrine or the womb chamber where the idol of God resides, which is taller than the smaller shrine where assembly of devotees took place. In these temples, dance was performed in the assemble space. In the later temples two more chambers were added to the temple design one of them exclusively for dance performance and the other for offerings. This shows the increasing cultural significance of dance parallel to the design development in temple architecture. In the coming pages these characteristics will be exemplified and discussed in depth.

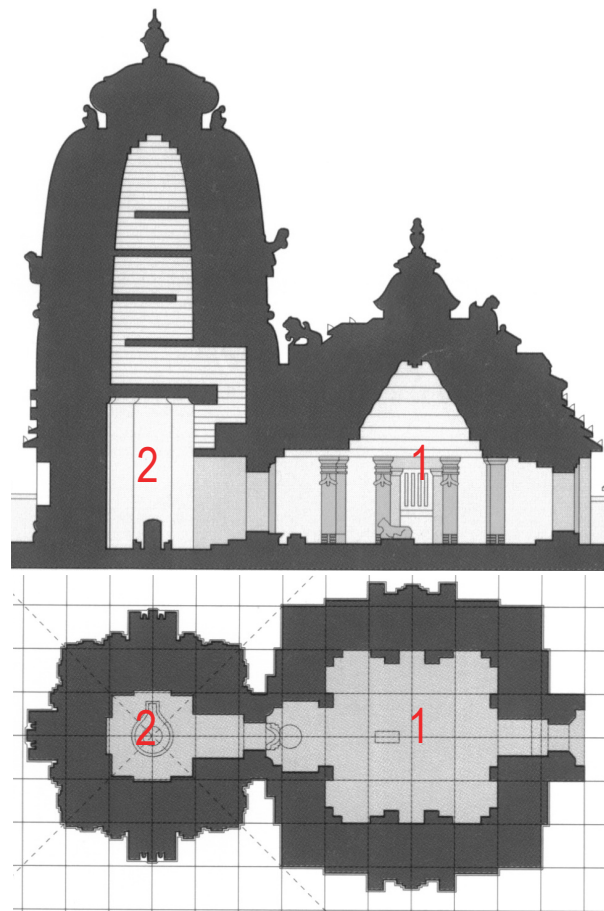


Fig.4. Nagara temple plan showing the assembly 1. assembly chamber and the 2. womb chamber

PARSURAMESHWAR TEMPLE:

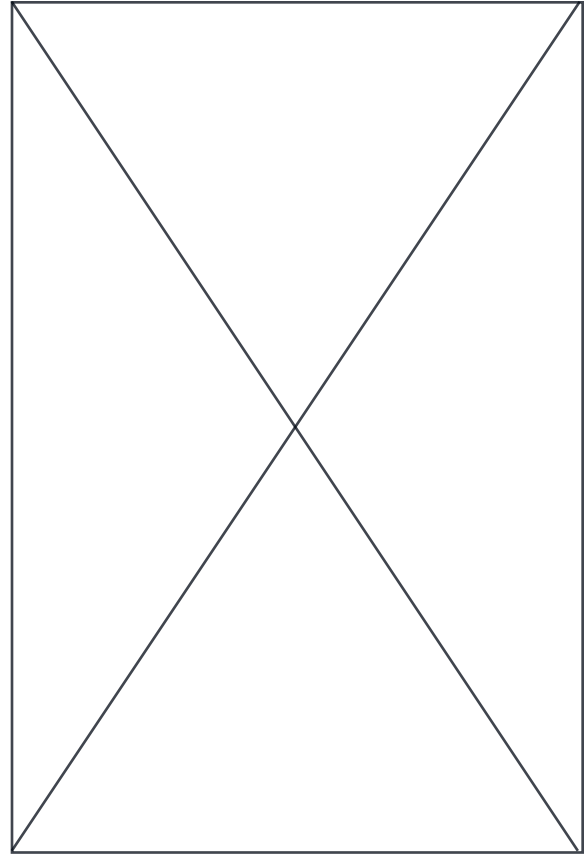


Fig.5 Parsurameshwar temple in Bhubaneswar(650-700AD):

1. The temple stands as a solid mass structure with no openings or penetrations and the short assembly chamber that was added later does not seem very coherent in style with it.
2. The a squat rectangular assembly space was also used as a dance pavilion (shown in dotted).
3. Stone is used harmoniously on the floor, the walls and the roof as if the temple has risen from the earth like a mountain and rising up to the sky.
4. The convex surface of the main temple implies this emphasis along the vertical axis, even more.

MUKTESWARA TEMPLE:

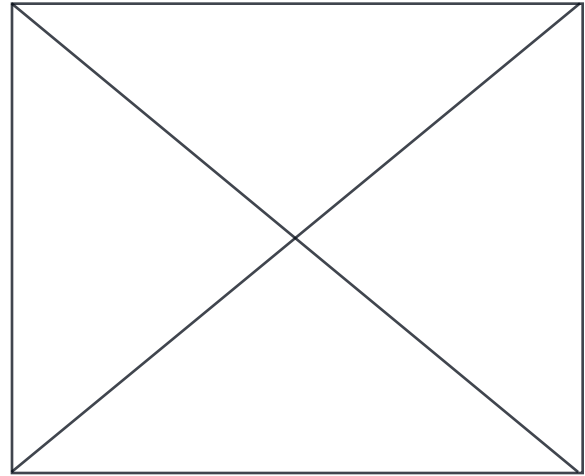


Fig. 6 Mukteswara Temple, Bhubaneswar(late 10th century AD)

1. The Dance Pavillion seen here is still rectangular in plan but its design much more well integrated with the main temple and proportionately balanced compared to Parsurameshwar temple.
2. The entrance to the temple is marked by a beautifully sculpted gate that marks the threshold to the temple complex. The doorway of the assembly hall creates yet another threshold before one enters into the main chamber. These elements portray some of the fundamental concepts in Indian architecture and culture, i.e. the significance of the in-between space and it is necessary to understand them in the order to design the performing arts center in this cultural context.
3. Even though the two chambers stand as two distinct structures, yet their proportions are more harmonious to each other in comparison to the parsurameshwara temple.

BRAHMESWARA TEMPLE:

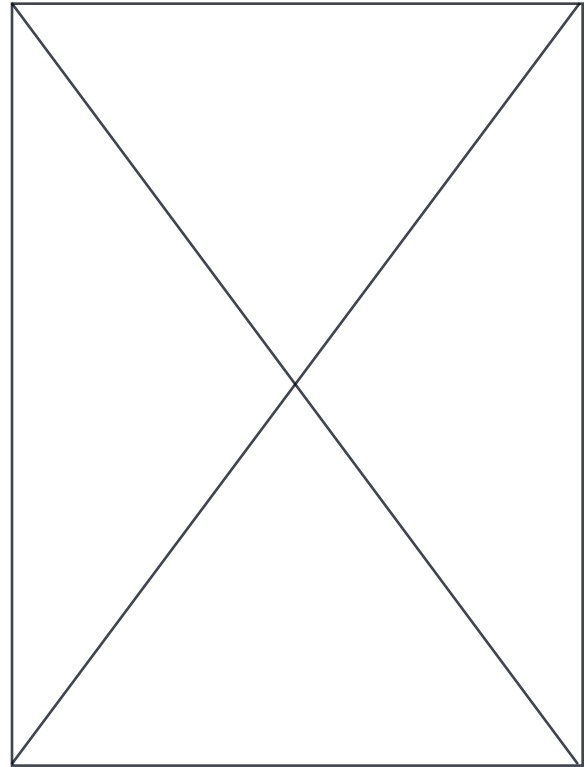


Fig.7 Brahmeswar Temple, Bhubaneswar(1075 AD)

1. The dance/assembly hall in this temple becomes square in plan and its geometry much more regularized and integrated with the main temple.
- 2.. Here again there are only two chambers but the dance/assembly chamber is much more ornate with carvings, portraying that dance along with architecture have both evolved and more culturally significant.
3. This temple has a distinct boundary wall around it separating the sacred and profane. The use of wall as a demarcation is very prevalent in Indian architecture. Yet the temple rises beyond the height of the walls preserving its visual connection to the outside.

LINGARAJ TEMPLE:

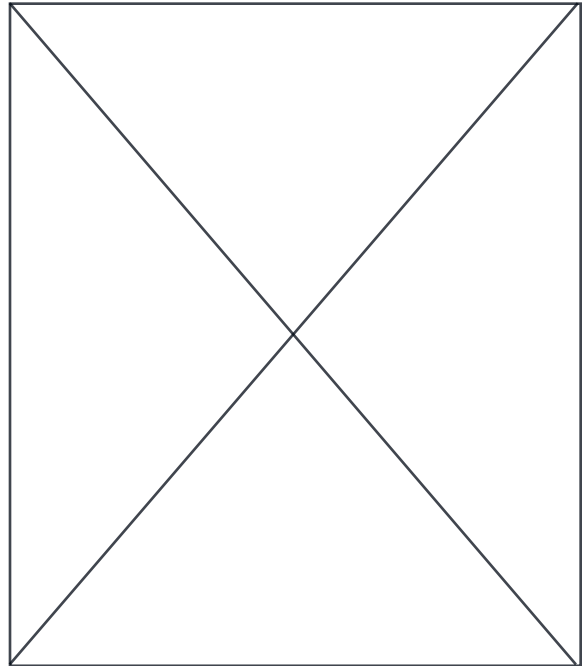


Fig.8 Lingaraj Temple, Bhubaneswar(early 1100s)

1. Lingaraj temple marks the point when dance is represented even more expressively because the temple complex has another pavilion added to its composition. The *Natamandapa* as seen here, is a separate structure from the assembly hall and was exclusively used for dance and music.

KONARK TEMPLE:

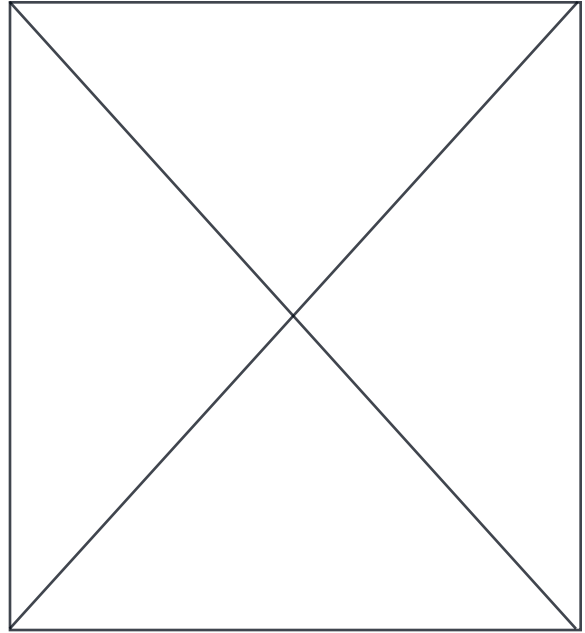


Fig.9 Sun Temple, Konark(1240 AD),

1. The last in the series of temples consisted of a dance pavillion which was completely detached from the main temple.
2. Here the dance pavilion stands as an independent structure with more elaborate carvings sans the roof structure.

DYNAMICS OF THE TEMPLE

Movement of human body in the temple:

“In Hinduism the attainment of spiritual perfection is likened to long journey of many stages, frequently visualized as a progression upwards through various stages of consciousness. Likewise the temple is conceived as a place of transit, a ford or crossing place. In the rituals that take place within the temple the movement of the worshipper and the priest is of greatest importance. There is the symbolism of the passage through the doorways which is connected with the idea of transition from the temporal to the eternal.”

(Michell, pg.66)

The promenade through the temple is an analogous study for designing the promenade through the theater. The realm in-between the outside and the inside is connected by series of thresholds that create a spatial sequence through which one moves to achieve the goal. In a temple, as the body moves through these overlapping spaces it goes through a transformative experience generated by the architectural elements that heighten the anticipation to reach the source from which life generated. The destination is where one attains the satisfaction or the sublime experience of his journey. These are some of the fundamental concepts that tie and define some of the basic concepts in architecture of the past and that of today. Such architectural drama can also be seen in the Stepped wells of Gujarat, India.



Fig.10 Section through Brahmeswar temple (Diagram showing the thresholds in the journey through the temple)

"In architecture, the in-between refers to the realm of actual physical change that finds expression linking two to area with distinct environmental qualities. The most significant of these is the connection between outside and inside through spatial in-between zones. This transition deals with the movement from one situation to another; from one set of space-light values to another. A realm of transition can be a totally different experience. There are examples where the entire experience revolves around the idea of transition, like the stepped wells where the land-water transition is often expressed through elaborate architectural drama."(Jain, 66)

In the paragraph above Jain discusses how the act of fetching water from the wells in Gujarat, India (Fig.) was experienced and the way by which the symbolic and ritualistic significance of water was emphasized through architectural expression. The realm in-between the body and the water is connected by series of thresholds or colonnades that create a spatial sequence through which we move to reach the water. As the body moves through these overlapping spaces it goes through a transformative experience generated by the architectural spaces that heighten the anticipation to reach the water. Water in its symbolic significance becomes the destination or the goal.

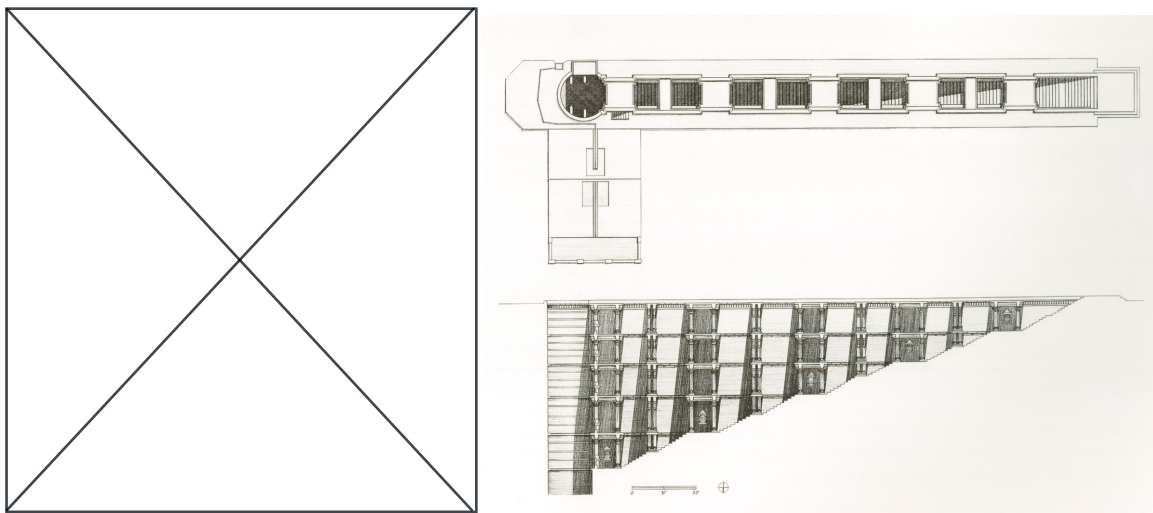


Fig.11 View of a stepped well in Gujarat with the plan and section drawing.

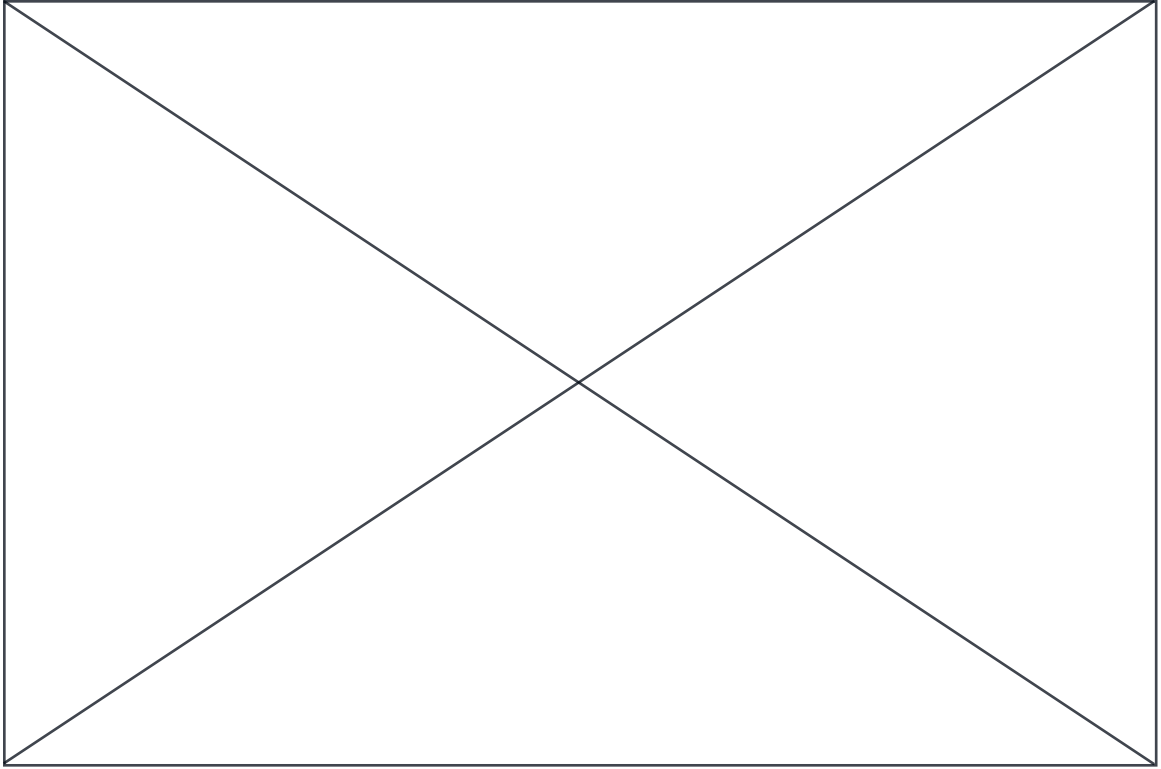


Fig.12 Odissi dancers performing. Showing the various moods expressed by the dancer through subtle movements of hands, fingers, eyes and neck.

“Jato hasta stato drusti; jato drusti stato mana; jato mana stato bhavo; jato bhavo stato rasa.”

“Wherever the hand moves, there the glances follow; where the glances go the mind follows; where the mind goes the mood follows; where the mood goes, there the flavour is (rasa).”

-Nandikeswara

ODISSI DANCE

Why Dance?

"The dance experience is an interface, a bridge between person and culture." (Snyder, pg.443). Allegra Snyder in her article, "Transformation, Inner Space and future of Dance" describes the importance of understanding dance as a way of learning about the physical self and its relationship to the built environment. Thus the goal for this thesis is to study the context of dance and temple in the cultural environment and how they converge and diverge in different ways. While temples provided the space for dance in the past, its image today has been influenced by many changes that took place in the cultural, political and religious environment of the place. The Konark temple represents the period when dance and architecture reached a point of climax in history and followed a sharp decline when Islam and later Colonialism affected the culture and arts due to the changing religious and political scene of the state. Odissi dancers in the temples were considered prostitutes and when British rule came into effect the performance of Odissi as a religious ritual was completely banned from the temples. For 200 years Odissi dance faced the most drawback until it was revived in the 1950s when the country was in the process of regaining its national identity after its independence in 1947. The revivalists of that time went back to study the sculptures at the Konark temple to resurrect the dance and in the process recreated the dance that had lost its importance in the cultural traditions of the people. The new form of Odissi had its old historic roots yet it had changed to conform to the changing cultural trends of the people during the 1950-60s. Earlier it was bound within the religious doors of the Hindu temples but upon its revival it became a more public or a secular form of art and was performed on stages world wide. While dance is no more a part of the religious ritual it is a prominent part of the cultural scenario today. In the quote below, Allen describes the revival of Bharat Natyam, which underwent similar transformation as Odissi.

The term "revival" is a drastically reductive linguistic summary of a complex process-a deliberate selection from among many possibilities-which cries out to be examined from

more than one point of view. While the “re-vival” of South Indian dance certainly involved a re-vivification or bringing back to life, it was equally a re-population (one social community appropriating a practice from another), a re-construction (altering and replacing elements of repertoire and choreography), a re-naming (from nautch and other terms to bharata natyam), a re-situation (from temple, court, and salon to the public stage), and a re-storation (as used in Schechner 1985:69, a splicing together of selected “strips” of performative behavior in a manner that simultaneously creates a new practice and invents an historical one). The discourse on South Indian dance to date has privileged the term “revival” over other equally descriptive ones, obscuring the complexity of the process, focusing attention onto a simple, celebrative vision of the giving of new life. (Allen, Pg. 63-64)

When the dancers had only the static sculptures of the temples to recreate Odissi, their task was to design the movement from stance A to stance B; in a way designing the in-between space or the transition from one gesture to another, which can be likened to the process of moving through a temple or going down a stepped well and experiencing the different



Fig.13 a and b Dance sculptures in Sun Temple, Konark(1240 AD), and time capture showing movement of body from position A to B. Image showing resurrection of Odissi dance.

thresholds to reach the destination. Similar to the choreographers who re-invented the Odissi dance the purpose of this thesis is to re invent the architecture that houses the dance (like the temples in the past) and in re creating these in-between spaces or the links one can tie the past present and the future.

The dancer follows the rhythm of the music in a similar way by which a person follows the steps down to the well in the stepped wells. “ Change occurs from increase in motor activity, beyond the norm, through sensory overload such as highly complex or rigorous moving experience, through the thumping of the feet, whirling, turning and leaping.” (Snyder, pg.443)

The time/space of the dance not only transforms the experience of the dancer but also everyone enveloped in that event. As a dancer moves through the space she is constantly changing and transforming to the rhythm of the music, relative to the physical dimensions of the architectural space in which she is performing. At a broader scale one relate the cultural transformation similar to dance and architectural spaces (stepped wells).The cultural significance of the place/ space through time lead to alternation of thinking. As a result the meaning or significance of a ritual is ever evolving and changing.

While cultural transformations have affected the space for dance and architecture, today the recognition of Odissi is not as prominent as it was in the temples of Orissa. The purpose of this thesis is to recreate the space for dance based on an understanding of the cultural needs of today so that the spirit of dance as a social custom evolves with time rather than buried in the shadows of the past. This thesis take the new cultural context to promote the growth of dance.

PART-III

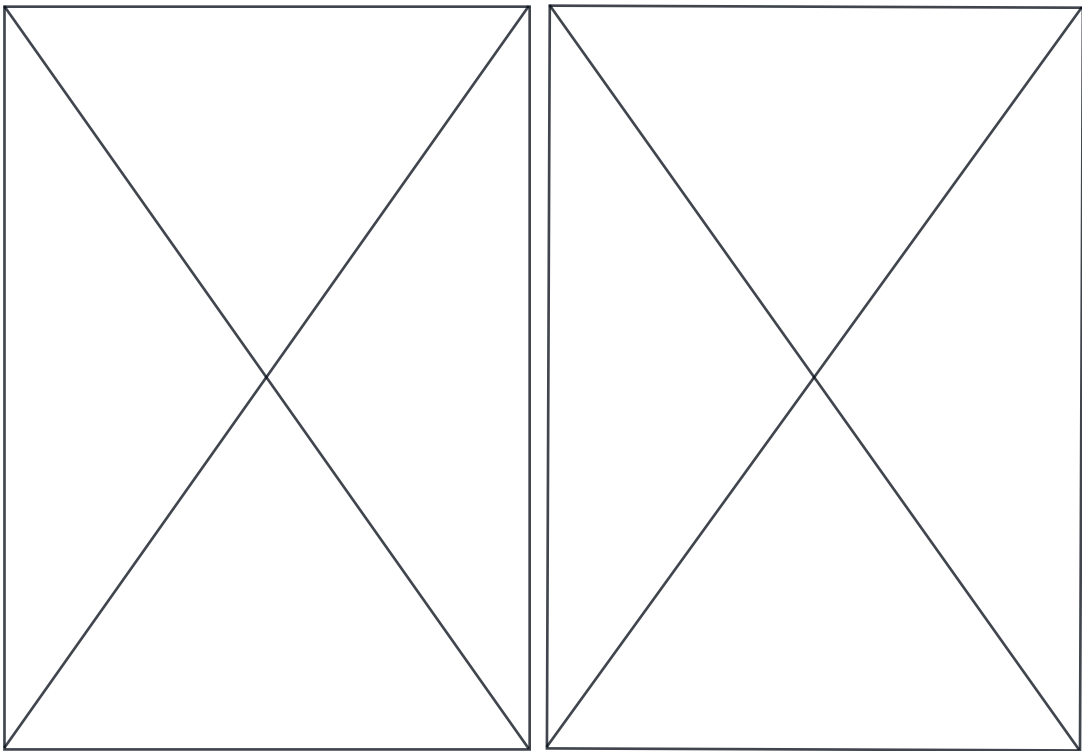


Fig.14 a and b. View of a stepped well in Gujarat and its re-interpretation in the design of IIM Bangalore by BV Doshi

PRECEDENTS/EXAMPLES

“The value in Indian architecture, can be appreciated by the fact that some of them have origins in concepts and manifest forms that are more than four thousand years old. And in one form or another, these spatial elements have continued to retain their relevance even today.”

Thematic Space in Indian Architecture
by, Kulbhushan Jain

PRECEDENT STUDY

The function of the performing arts center emulates the purpose of the temples which served as educational institutions for dancers, musicians and architects. It was necessary to research and investigate the space for dance and how it developed and changed through time with respect to the change that occurred in the realm of dance itself. But in designing a performing arts center for today it is necessary to study the architectural history and language of India. History of architecture in India shows a pattern of different cultural influences and lessons of change can be learnt in how these buildings have adapted to different political, environmental and technological advances. Social and regional patterns are different in different parts yet there are certain common elements that tie them together. Kulbhushan Jain points out some of these elements in the book, "Thematic Space in Indian Architecture", where he studies "the spatial order that apparently runs across the enormous spectrum of building types in India." (Jain) In his book he describes the conceptual characteristics of the space that is portrayed in Indian architecture, discarding the functional or regional aspects because it in these details one can re-interpret the ideas in an evolving context. But in the pursuit of an imagery for the performing arts center, both conceptual and regional aspects became more apparent subjects of discussion. Examples of buildings that display certain common characteristics of Indian architecture were studied for this purpose, and what can be seen is certain building elements seem to appear and re-appear in different forms through time. For examples, the shading devices that were used in the 16th century mughal architecture of Fatehpur Sikri, reappear in a different form in the 20th century Post-Colonial architecture by BV Doshi at the IIM, Bangalore. In the following pages is a discussion of these fundamental concepts that can be seen in both historic and modern architecture of India and the lessons learnt will be applied in framing the design strategy for the Odissi performing art center.

INSIDE/OUTSIDE

FATEHPUR SIKRI: Built by Akbar, one of the prominent Mughal rulers during the second half of the 16th century, this palace is an example where regionalism, politics, and religion played an important role in giving character to the building complex. Regionalism can be seen in its use of native red sandstone that was used in the construction of different buildings and also ways in which the different architectural details and elements were designed to respond to the climate of the region. The plan of the palace complex consists of private and public spaces that were connected through series of colonnades, courtyards and pavilions that had both spatial and temporal significance. The colonnades not only served as connecting elements but also provided shelter from the sun and rain. The definition of boundaries are very ambiguous and there is a beautiful play of transition from the interior to exterior spaces. The pavilions and courtyards change in scale and proportion and portray a sense of growth and continuity, that both unite and divide various parts of the complex.

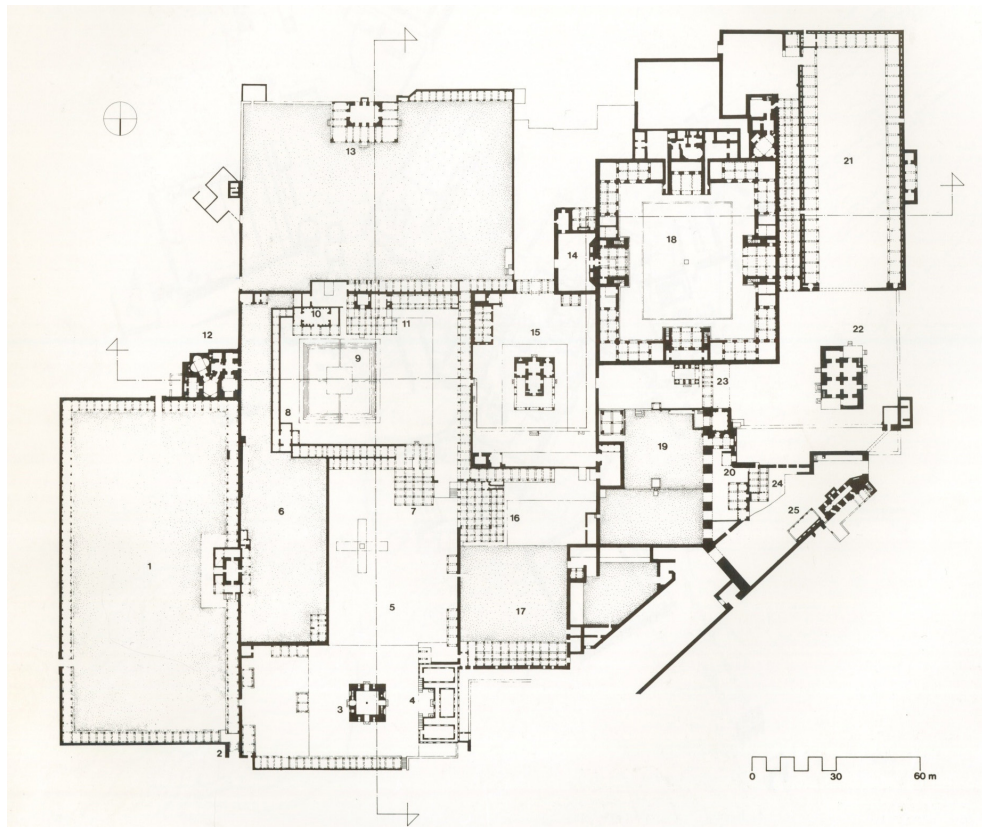


Fig.15 Plan of Fatehpur Sikri showing open and closed spaces with interconnecting colonnades in the palace complex

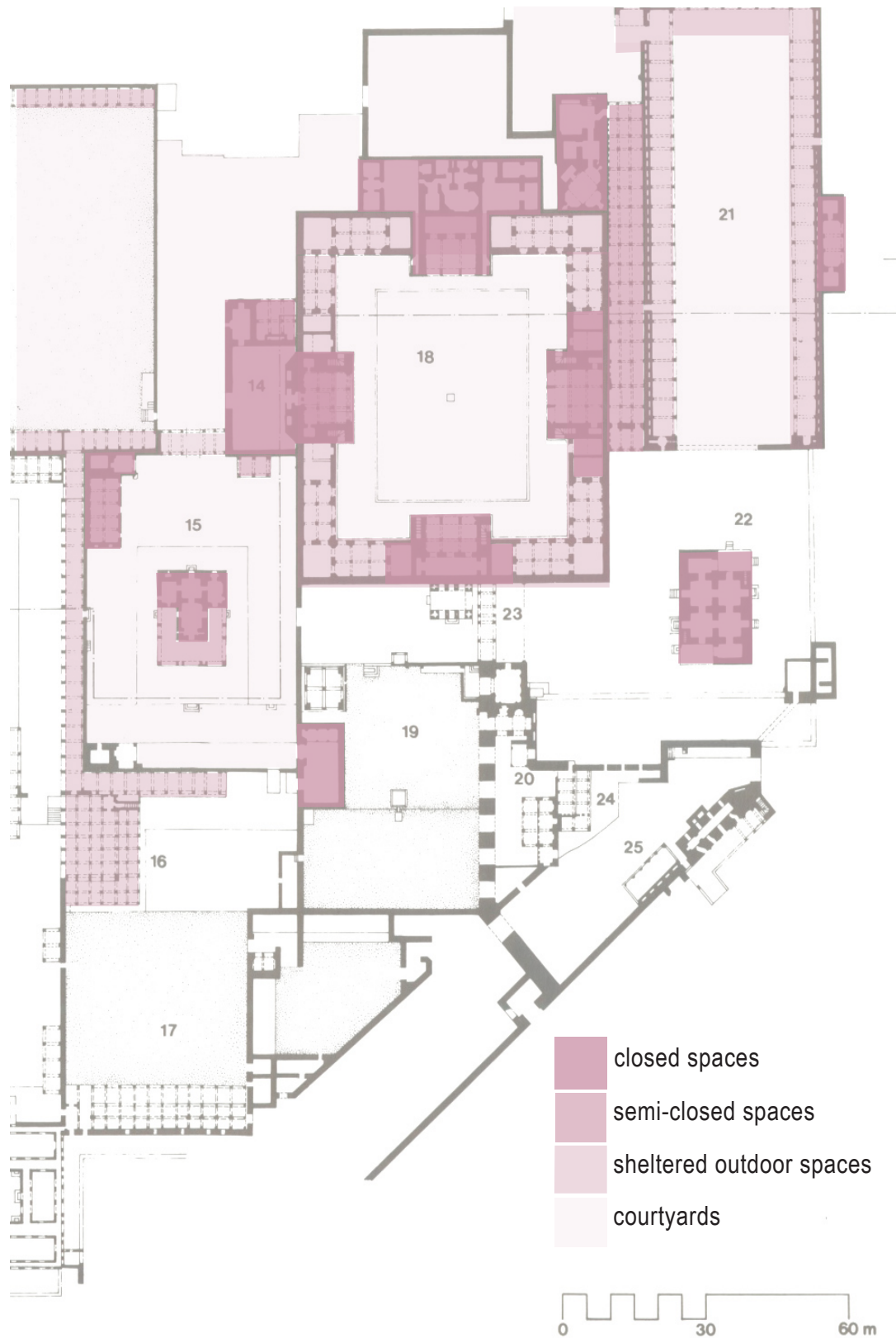


Fig.16 Plan diagram of Fatehpur Sikri showing different degrees of open and closed spaces and their spatial sequence. These architectural elements can be applied in designing the spaces in the performing arts center.

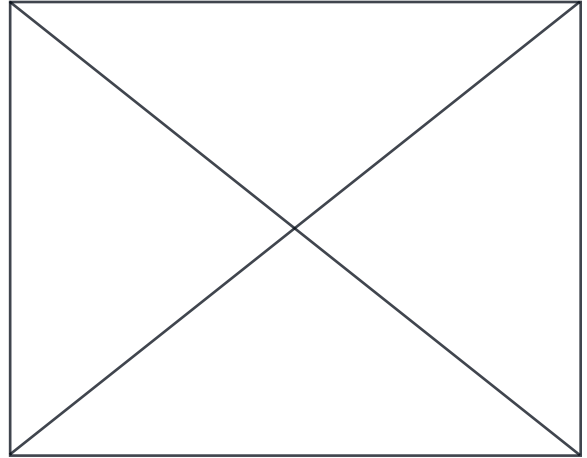


Fig.17 View of the “*panch mahal*” or the 5- tier pavilion with inter-connecting colonnade structure made out of local red sandstone provide shade from the sun

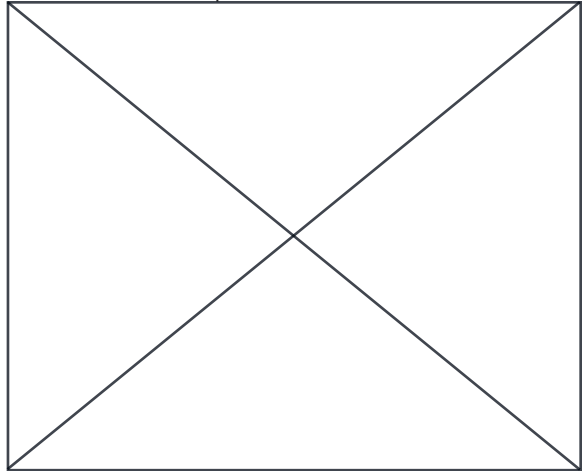


Fig.18 View of an interior room showing “*jaalis*” or screens that provide shade from the sun yet allow air to circulate through the spaces.

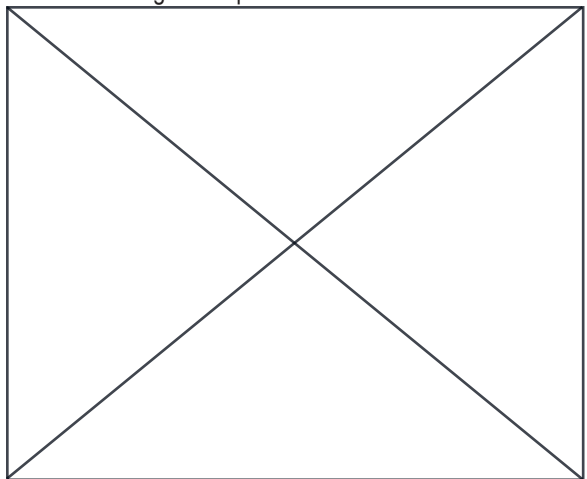


Fig.19 View of pavilions at Fatehpur Sikri

INDIAN INSTITUTE OF MANAGEMENT, Bangalore:

Fatehpur Sikri played precedent to many modern architectural examples in India, because it characterized some of the fundamental ideas of place making and spatial organization. When B V Doshi, one of the prominent modern architects in India designed IIM in Bangalore he incorporated many of those physical attributes into the design of the institution. The building complex consists of series of pavilions or classrooms with interlocking courtyards and landscaped spaces that create layers of transition along the promenade. As the corridors flow through different spaces like the colonnades in Fatehpur Sikri, “they are sometimes open, sometimes with pergolas and sometimes partly covered with skylight” (Doshi). The notion of space is heightened in this in-between realm, in the articulation of the threshold and it is the journey that makes the destination significant. These fundamental concepts characterize Indian architectural style and these concepts should be the primary defining elements in the design of the spaces in the performing arts center.

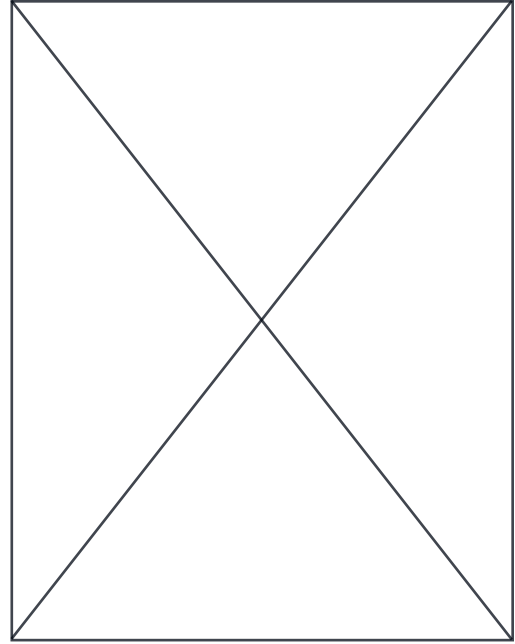


Fig.20 View of an exterior colonnade structure at IIM Bangalore

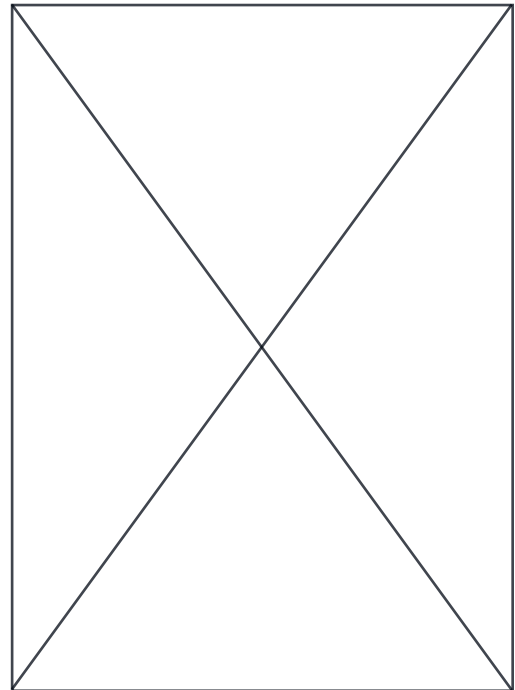


Fig.21 View of an interior corridor at IIM, Bangalore that varies in height creating different zones and points of interest

LIGHT AND SHADOW

The aspect of light and shadow is very expressive in Indian architecture. From ancient to modern time, building forms have adapted and responded to the tropical climate of the country. This investigation will look at examples of buildings and the architectural elements that emphasise how they respond to sun and light. While the purpose is to prevent the heat and glare from the sun to create uncomfortable living conditions, at the same time the building should perform to allow cross ventilation of air through the spaces. In the Padmanabhapuram Palace in Kerala(Fig.) the corridors or circulation spaces are on the perimeter while the living spaces are inside. Beautiful wooden lattice work covers the exterior facade with operable windows integrated within them. This screening system creates a buffer from the sun and heat and allows the interior spaces to stay cool, but at the same time allows for air circulation.

Antonin Raymond, an architect established in Japan was commissioned to design a residential dormitory called Golconde for the Sri Aurobindo, in 1935 who had founded a religious community in Pondicherry. This building, made out of reinforced concrete was built even before Le Corbusier de-

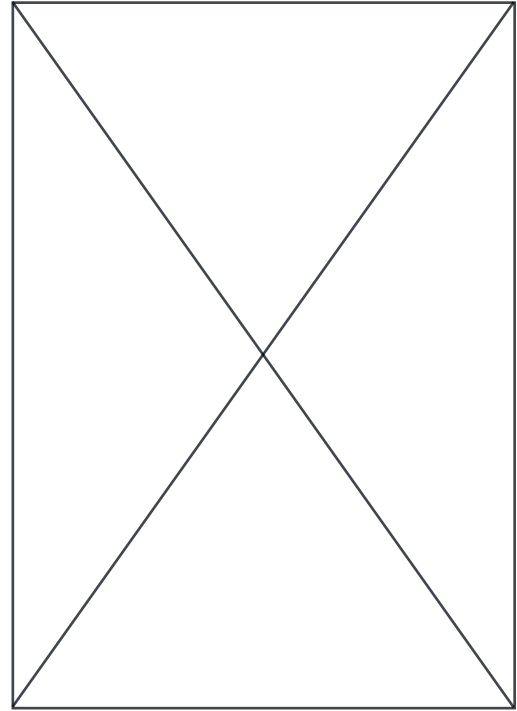


Fig. 22 View of an interior corridor at Padmanabhapuram Palace in Kerala showing the wooden screens or louvers with integrated windows.

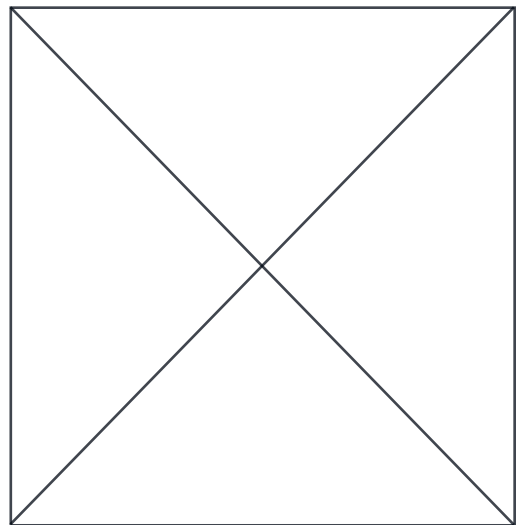


Fig.23 View of an interior corridor at Golconde, Pondicherry. The image shows the concrete louvers on the right and teak sliding door in the interior.

signed his reinforced concrete buildings in Chandigarh and used many interesting architectural details that respond to the sun and outside. Here again, like in the palace in Kerala the circulation is on the perimeter, on the north side and has operable concrete louvers that allow to shade the interior spaces. “The north facing interior corridors facilitate a passive solar strategy for convection cooling. The sliding panels consist of staggered strips of teak wood, allowing for the passage of breeze, while maintaining visual privacy. Operable concrete louvers ensure constant air circulation between the north and south facades.” (Gupta, 152) In the following pages there are series of images of prominent architectural examples by Le Corbusier and Louis Kahn that also implemented some of the fundamental elements in their design. Also other examples of buildings that have used different screening elements in contemporary design.



Fig.24 Plan of Golconde in Pondicherry, India.
(Source: Golconde: The Introduction of Modernism in India by Gupta)

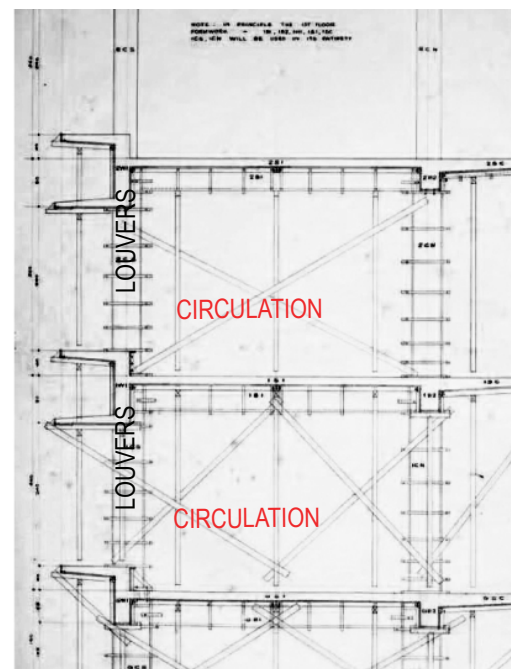


Fig.25 Section through the corridor space at Golconde showing louver construction details.
(Source: Golconde: The Introduction of Modernism in India by Gupta)

TEXTILE MILL'S ASSOCIATION BUILDING

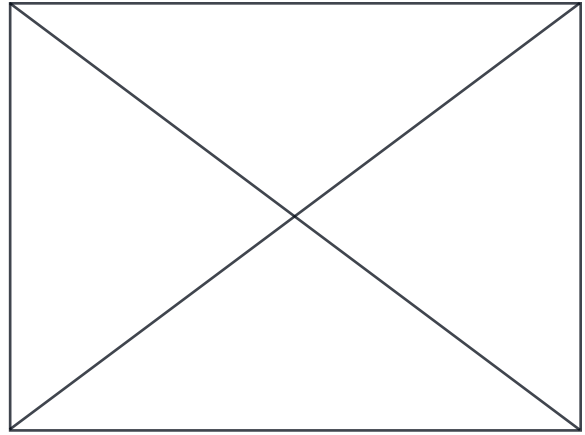


Fig.26 Textile Mill's Association building by Le Corbusier in Ahmedabad. Image showing bri-soleil on the facade angled to shade the interior spaces

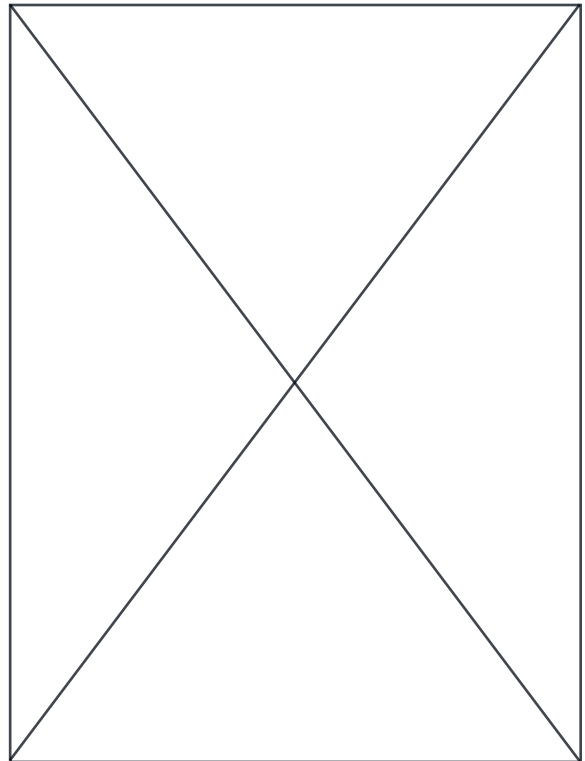


Fig.27 Sculptural stair case at the Textile Mill's Association building by Le Corbusier in Ahmedabad.

**INDIAN INSTITUTION OF MANAGEMENT
at Ahmedabad by Louis Kahn**

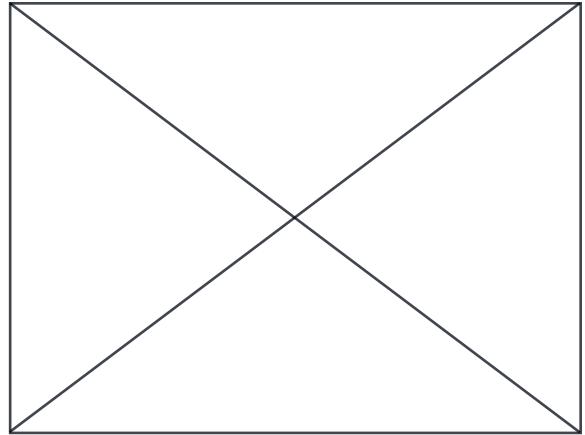


Fig.28 Institute of Management at Ahmedabad by Louis Kahn. Image showing his use of exposed brick and bold arches creating interesting solid and void spaces.

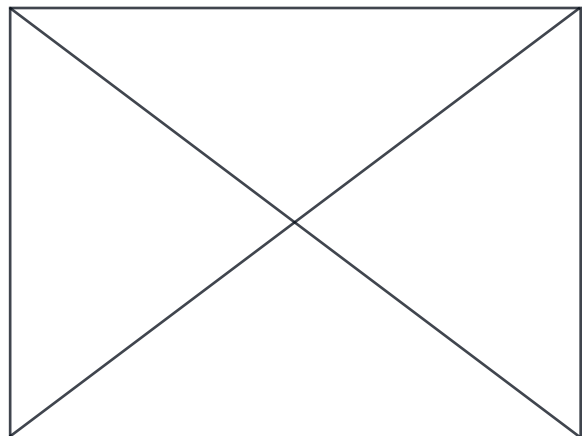
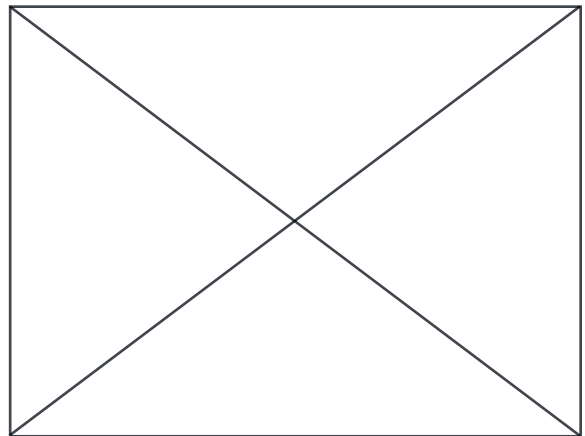


Fig.29 a and b View of shaded corridor space at Institute of Management at Ahmedabad by Louis Kahn. Image shows how the living spaces are shaded from the exterior hot conditions.

CONTEMPORARY APPLICATION OF TRADITIONAL MATERIAL ON BUILDING FACADES

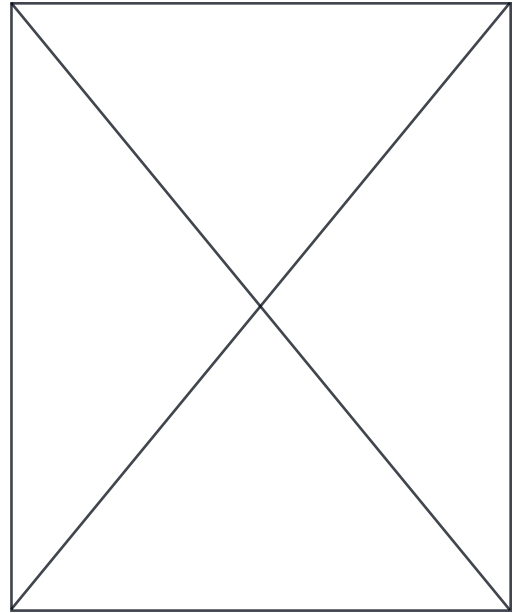


Fig.30 Brick Screen wall at the offices for the South Asian Human Rights Documentation Centre (a Delhi-based NGO) by Anagram Architects

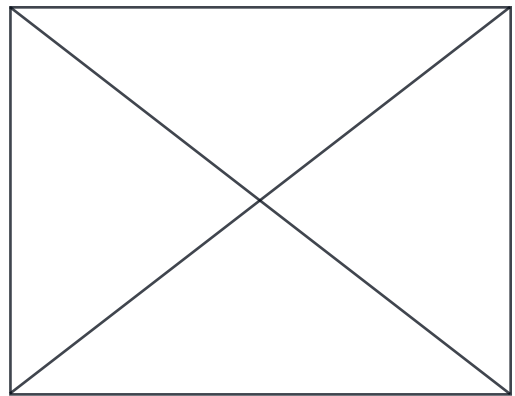


Fig.31 Stone museum by Kengo kuma uses traditional material with a modern interpretation

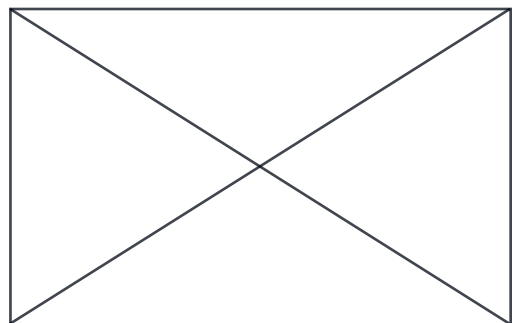


Fig.32 Toledo House by Nader Tehrani.

PART-IV

PROGRAM ANALYSIS

In designing the space for dance today it was essential to study the temples to understand the significance of dance in the culture and life of people. Temples were not only places of worship but also spaces within which music, dance, art and architecture nurtured and flourished. Odissi music and dance today is no more bound within the religious perimeter of the temples and is a secular form of art that has integrated with the popular culture. The performing arts center is a place of learning and performance for Odissi dance and music. The program consists of 3 primary theaters with inter connecting studios, library, classrooms, and exhibition spaces.

a. *Proscenium Theater*: Upon the revival of Odissi the most common space for performance today is a proscenium style theater which conforms to the frontal nature of the dance. Thus the center will consist of a large theater which can be used for both dance and music performances.

b. *Intimate small theater*: The smaller theater accommodates audience within a very intimate space that allows viewers to view Odissi dance at its best. The characteristics of Odissi dance consist of decoratively sculpted movements of the hip, legs, hands to patterns of gestures expressed through, fingers, eyes and emotions. The purpose of this theater is to allow the audience to experience these characteristics of Odissi in close proximity. The space is a revival of the Natyamandap or the dance pavilion in the temples.

c. *Open air theater*: In most parts of India, the climate is very conducive to open air performances all year around. Many cultural and social rituals are performed outdoors therefore this space will allow for both students and audience to engage in an outdoor setting.

Below is the spatial and area requirements for different programs within the center:

PUBLIC AREAS FOR VISITORS:

Foyer/assembly	
Coat storage:	200 sf
Box office	250 sf

Offices:	front of house manager:	200 sf
Exhibition spaces		3000 sf
Library	books and reading room:	2000 sf
	archives:	1000 sf
	audio visual library:	1000 sf
	lavatories:	350 sf
	Total :	8000 sf

ADMINISTRATION

General office:	500 sf
Deans office and secretary:	250 sf
Faculty offices: 10 @ 140 sf :	1400 sf
Communication/publicity offices:	200 sf
Director offices 4 @250 sf:	1000 sf
Total:	3350 sf

PERFORMANCE SPACES

Dance theater

1. Small theater	seating capacity : 30 size	800 sf
2. Large theater	seating capacity: 500 size:	6000 sf
3. Outdoor amphitheater		

Warm up space:	800 sf
Music rehearsal room:	550 sf
Green room: separate for men and women	
women:	450 sf
men :	450 sf
lavatories: 2 @ 300 sf-	600 sf
Costume storage:	420 sf
Lighting/ stage decor workshops areas:	1000 sf

Lighting/sound control room:	160 sf
Loading dock area	
Miscellaneous storage:	500 sf
Total :	11,730 sf

DANCE AND MUSIC DEPARTMENT

Total students: 3 year undergraduate level: 90

2 year graduate level: 50

Research level: 30

Total: 170 - 200 students

Permanent faculty: 15

Dance Studios

3 large: 1000 sf

3 small: 500 sf

Classrooms: 12 @600 sf: 7200 sf

Music studios: 3 @ 500 sf: 1500 sf

Student lounge: 660 sf

Teachers lounge: 600 sf

Lavatories: 300 sf

Total: 11760 sf

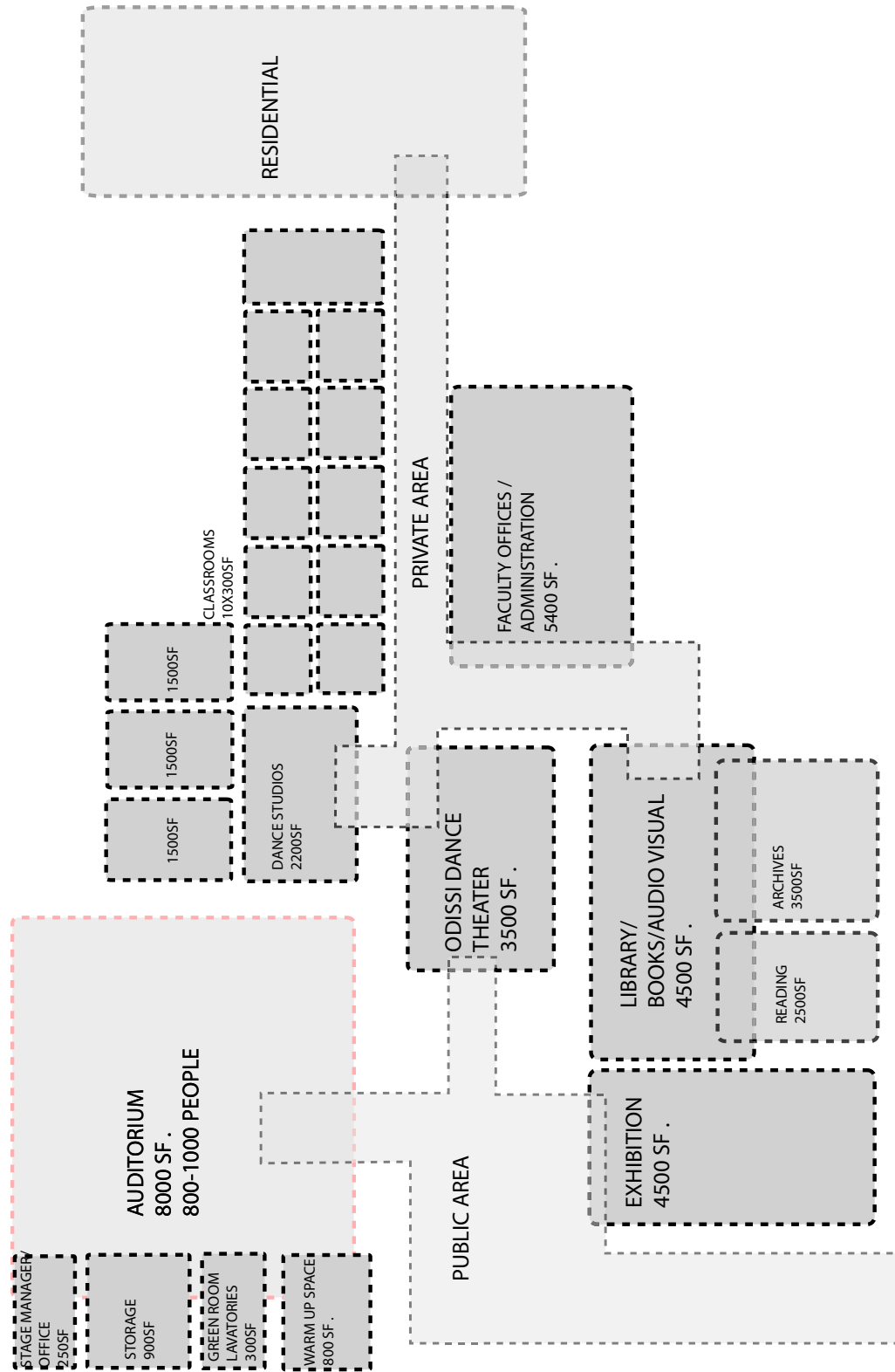


Fig. 33 Diagram showing different programs and their organization with respect to each other

PART- V

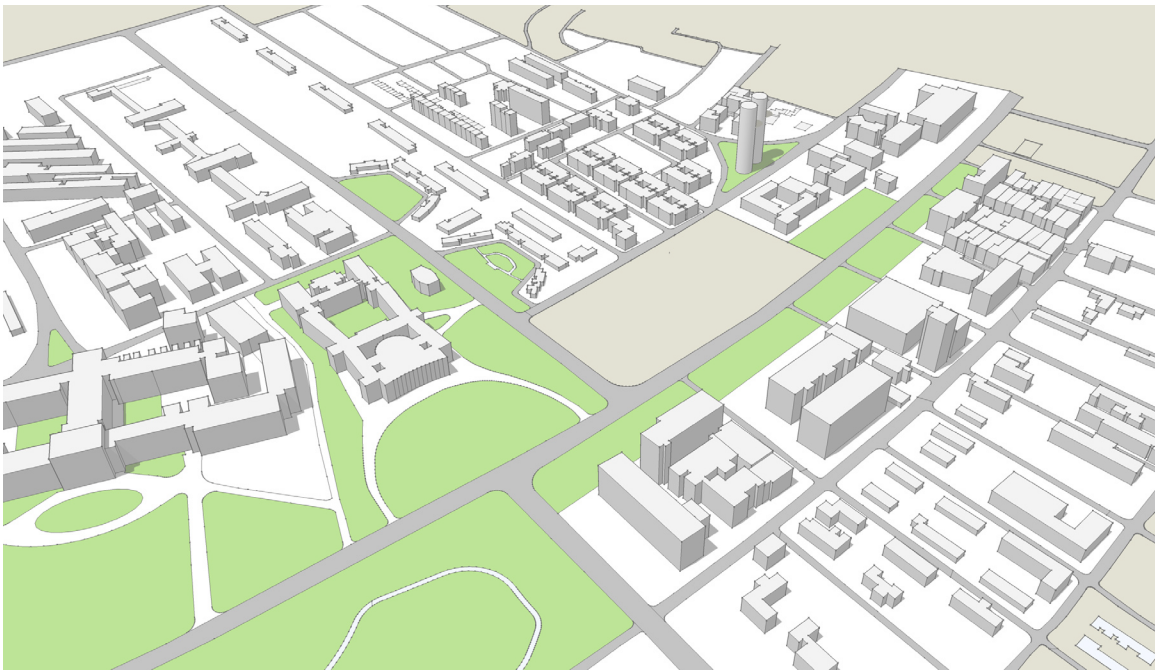


Fig.34 Axonometric view of the site in the neighborhood context

THE SITE AND THE CONTEXT

THE SITE

The site for the proposed performing arts center is located in Bhubaneswar, the capital of Orissa, where one can see the juxtaposition of old and new architecture i.e. the temples where Odissi dance originated and the new capital which is the political hot seat of today. Since the purpose of this thesis is to reinvent the space for dance, Bhubaneswar plays an appropriate backdrop for this intervention and becomes a testing site for locating the institution. The capital city was established to be the capital of Orissa in 1950, the same time when India was going through the process of reviving its identity after 200 years of Colonial rule. During this period Odissi dance also went through its resurrection by the choreographers. Otto Koenigsberger was the chief architect and urban designer of the new capital city during the same period when Chandigarh was envisioned by Le Corbusier. This thesis takes this new context to locate the performing arts center and create a dialogue with the historic context of culture and architecture. Aspects of regionalism and climate will be essential denominators for the design strategy. For Example, in Bhubaneswar the direction of wind is from SW direction during the hot summer months thus the building form should conform to this directionality for optimum air circulation through the spaces. In the following pages there is a series of studies of site and the context that show the essential points of consideration for the design of the Performing Arts center.



Fig 35. Location of Orissa and its capital Bhubaneswar. Showing the "Temple city" in the context of whole country

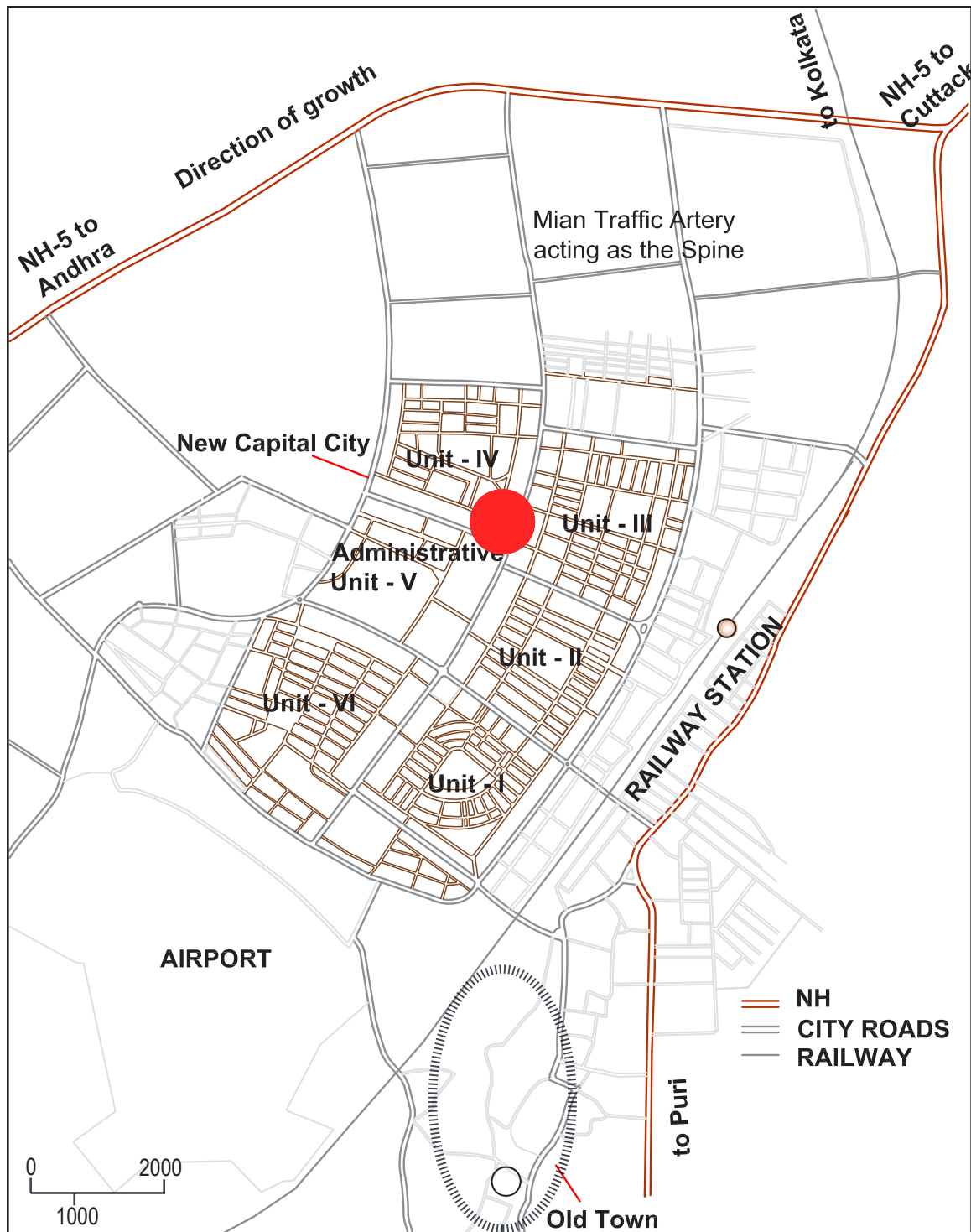


Fig.36. Map of the street grid of Bhubaneswar showing the new city (north) in the context of the old town (south) where the temples are located.

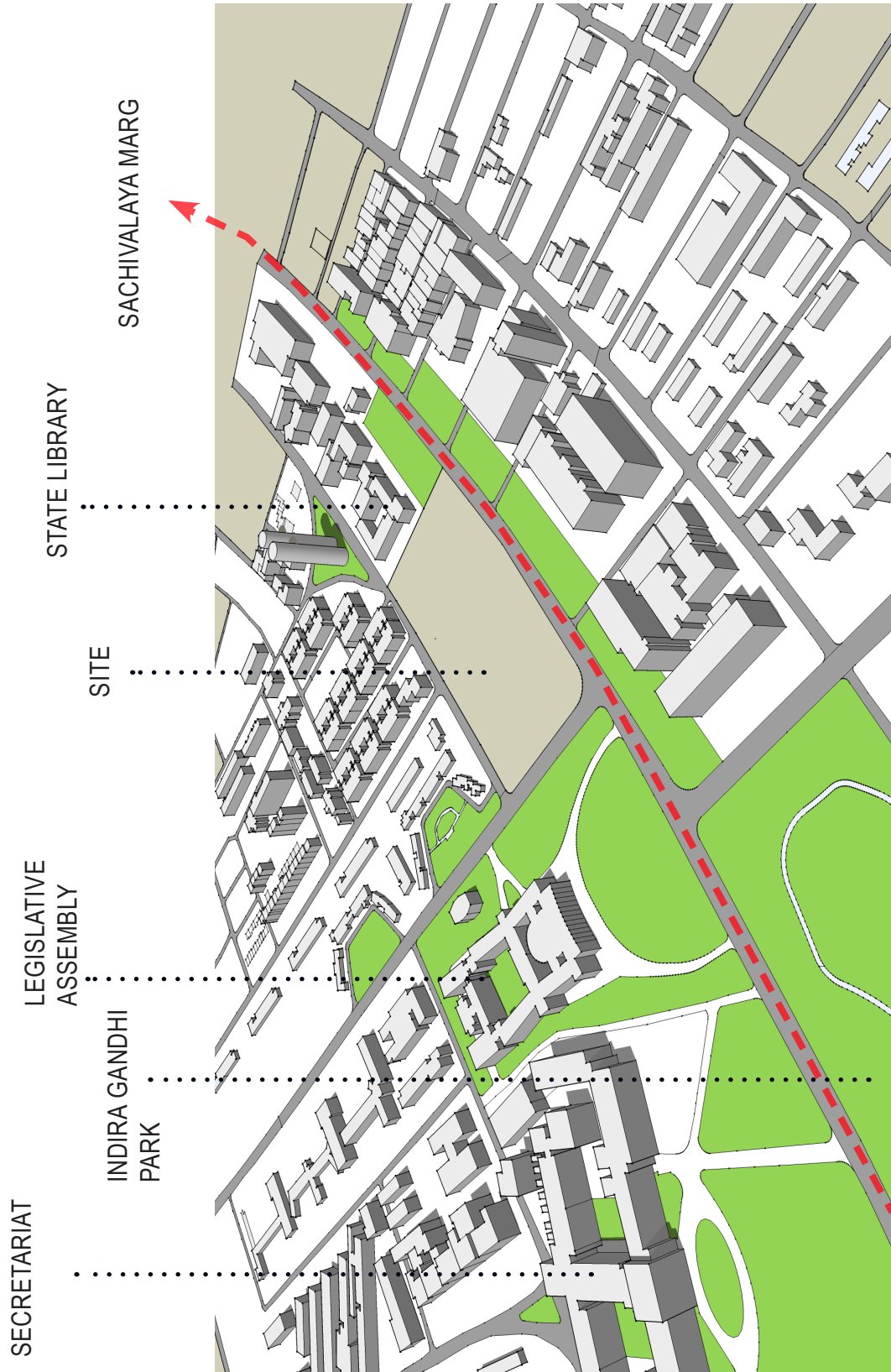


Fig. 37 View of the site in the context of its neighborhood showing some of the prominent Government and Institutional buildings located near it.

FIGURE GROUND



Fig.38. Figure/Ground diagram showing the built vs landscaped area in the neighborhood context. The urban density is quite sparse in Bhubaneswar.



Fig.39 View of a building set back farther from the street with line of trees acting as a buffer



Fig.40 View of existing building on the site. Currently the building is only used for performances and not for educational purposes. This thesis takes the opportunities that are present on the site to test the program for the performing arts center.

LAND USE



Fig.41 Diagram showing land use in the context of the site. The site is surrounded by institutional and government buildings that allow for the performing arts center to be located in neighborhood that define the context of the new capital city.

SITE ANALYSIS



Fig.42 Diagram showing site analysis with respect to land use and climatic analysis. The prevailing winds are from the SW direction during the summer months thus the building mass is broken into smaller bar buildings that allow air to circulate more freely through the spaces.

PART-VI



Fig.43 Axonometric view of the performing arts center

CONCLUSION

“To at least some extent every real place can be remembered, partly because it is unique, but partly because it has affected our bodies and generated enough associations to hold it in our personal worlds. And, of course, the real experience of it, from which the memory is carried away, lasts much longer than the camera’s 1/125th of a second: perhaps the light plays upon it and the shadow move; or breezes blow or the air is still; or perhaps the snow falling, blurring edges like memory blurs time itself.”

Body, Memory, and Architecture,
Kent C. Bloomer and Charles W. Moore

CONCLUSION

The temples in Orissa stand as a testimony to a culture that has undergone immense transformation. Dance which was part of a traditional ritual of the temple, no longer holds its old glory as a sacred ceremony but rather a performative art for the everyday people. In the process, the space for dance in the temple has lost its old significance. The new place for dance which is now outside the temple needs to stand as a landmark of the contemporary culture, yet reflect the roots of its origin. For this purpose, examples of buildings both historical and contemporary were studied to understand the concept of space in Indian architecture and the different characteristics that give identity to any architectural style. Issues of climate, culture, topography and technology were some of the guiding forces that dictated the nature of spaces in the performing arts center. The design was inspired by both traditional and modern architectural examples and the lessons learnt were then applied to enhance the spatial experience in the new architecture.

The succeeding pages will show how the design of the building was instigated by the various explorations done to understand the site, the context, the local materials and the precedents to create a dynamic spatial experience for the dancers, the musicians and the visitors. The performing arts center has three different dance venues that are connected by series of indoor and outdoor spaces that house the galleries, the studios, and the classrooms. The 3 different dance venues are, a traditional proscenium style theater, an outdoor theater and a small theater for intimate performances. The goal of the thesis can be expressed as:

OLD DANCE : NEW DANCE :: OLD ARCHITECTURE : NEW ARCHITECTURE



Fig.44 First floor plan of performing arts center. The circulation flows through series of closed, semi-closed and open spaces. Also they are located on the perimeter so that the living spaces can be buffered from the sun.

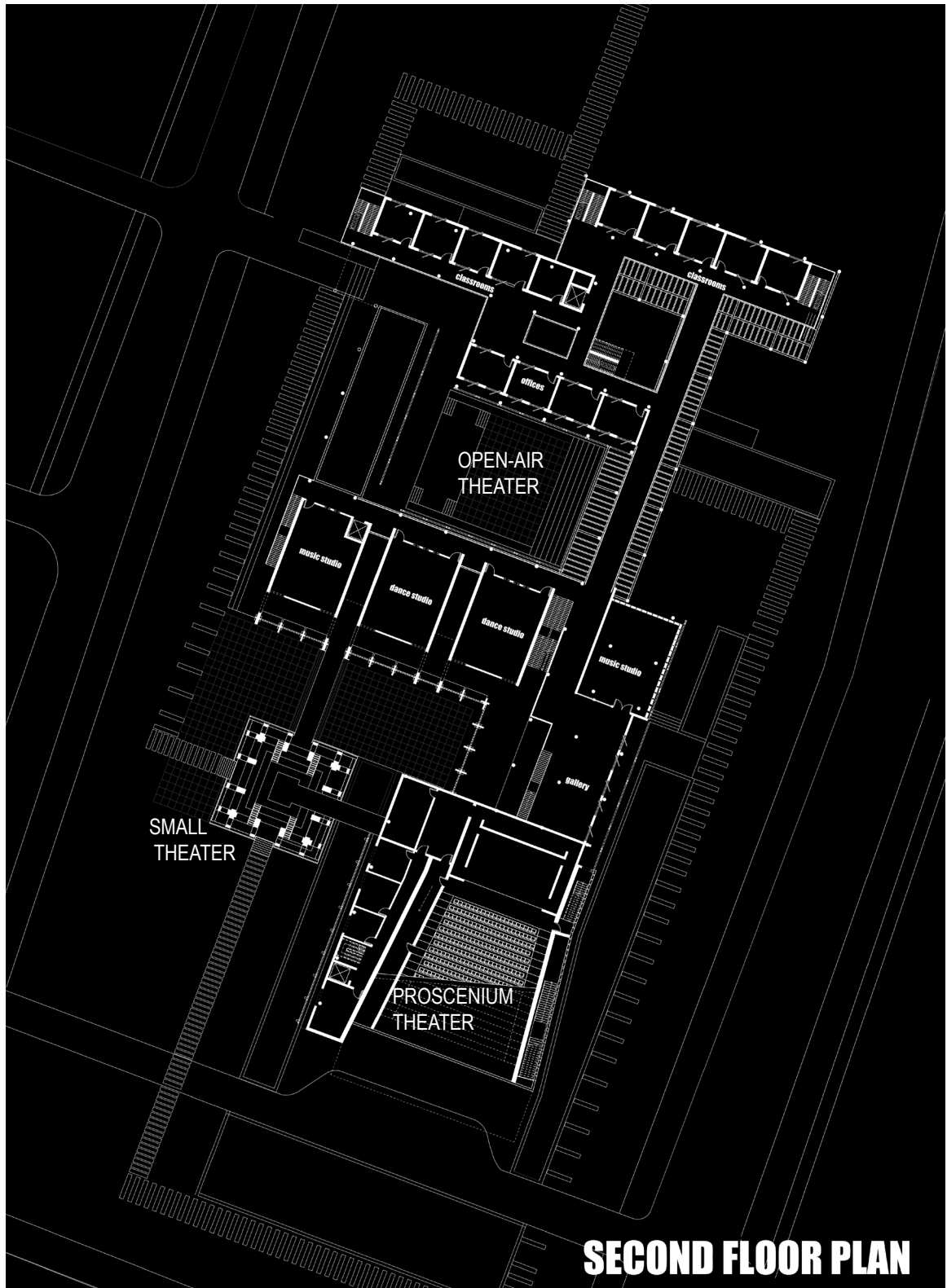


Fig.45 Second floor plan of performing arts center showing the proscenium theater on the second floor, the small theater on the west and the open air theater between the studio and classroom spaces.

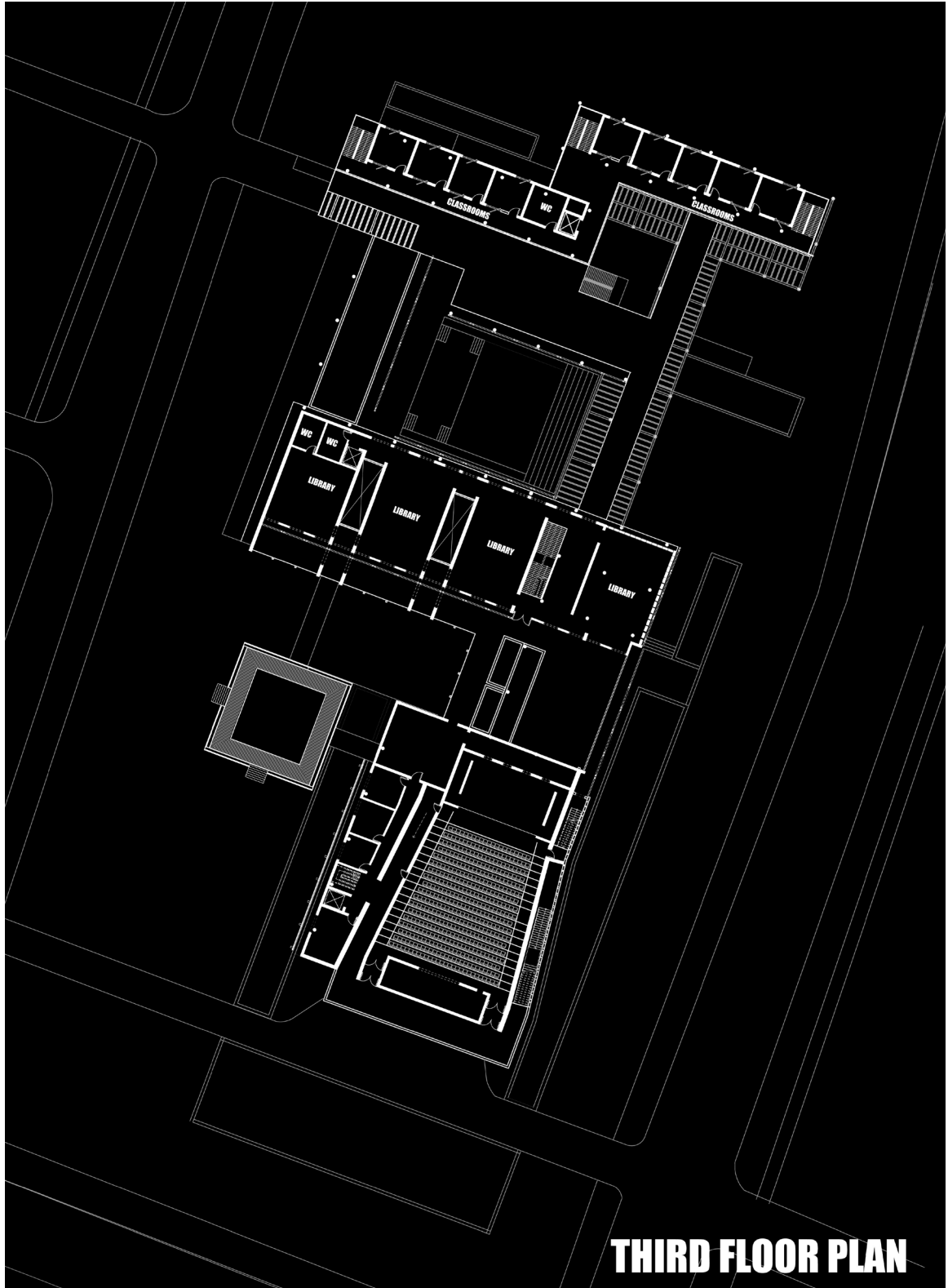


Fig.46 Third floor plan of performing arts center

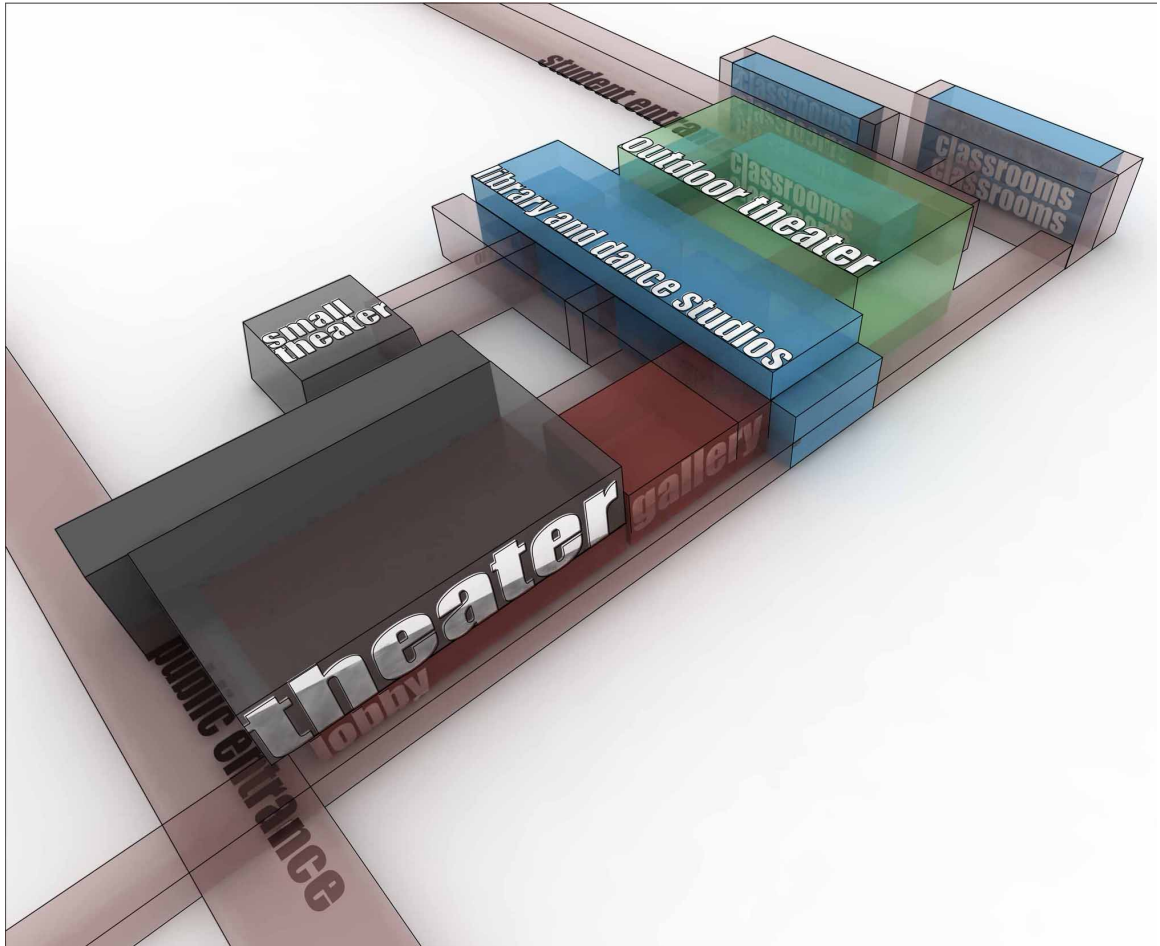


Fig.47 Diagram showing how different programs are organized on the site.

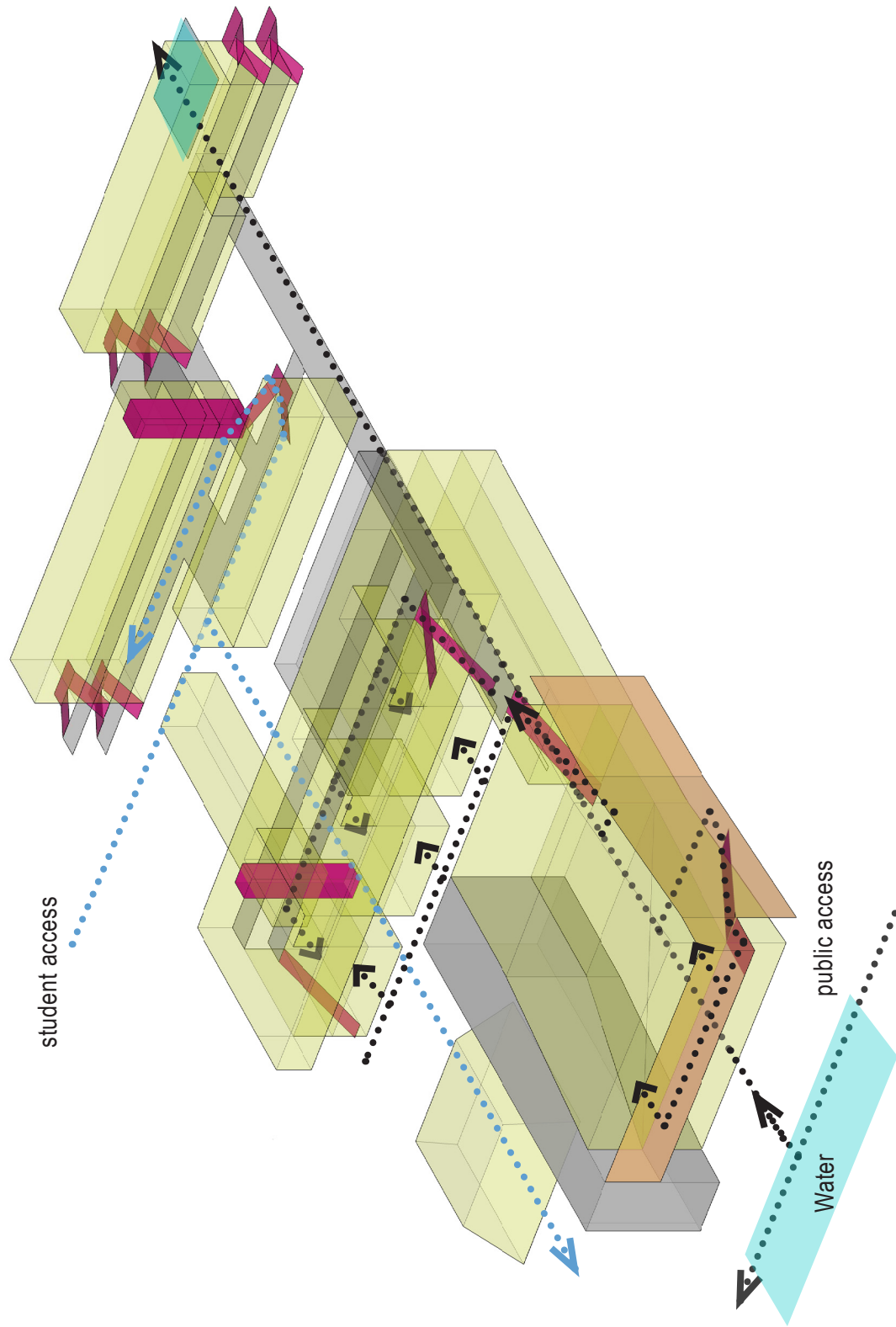


Fig.48 Diagram showing circulation through the building and how different spaces are connected.

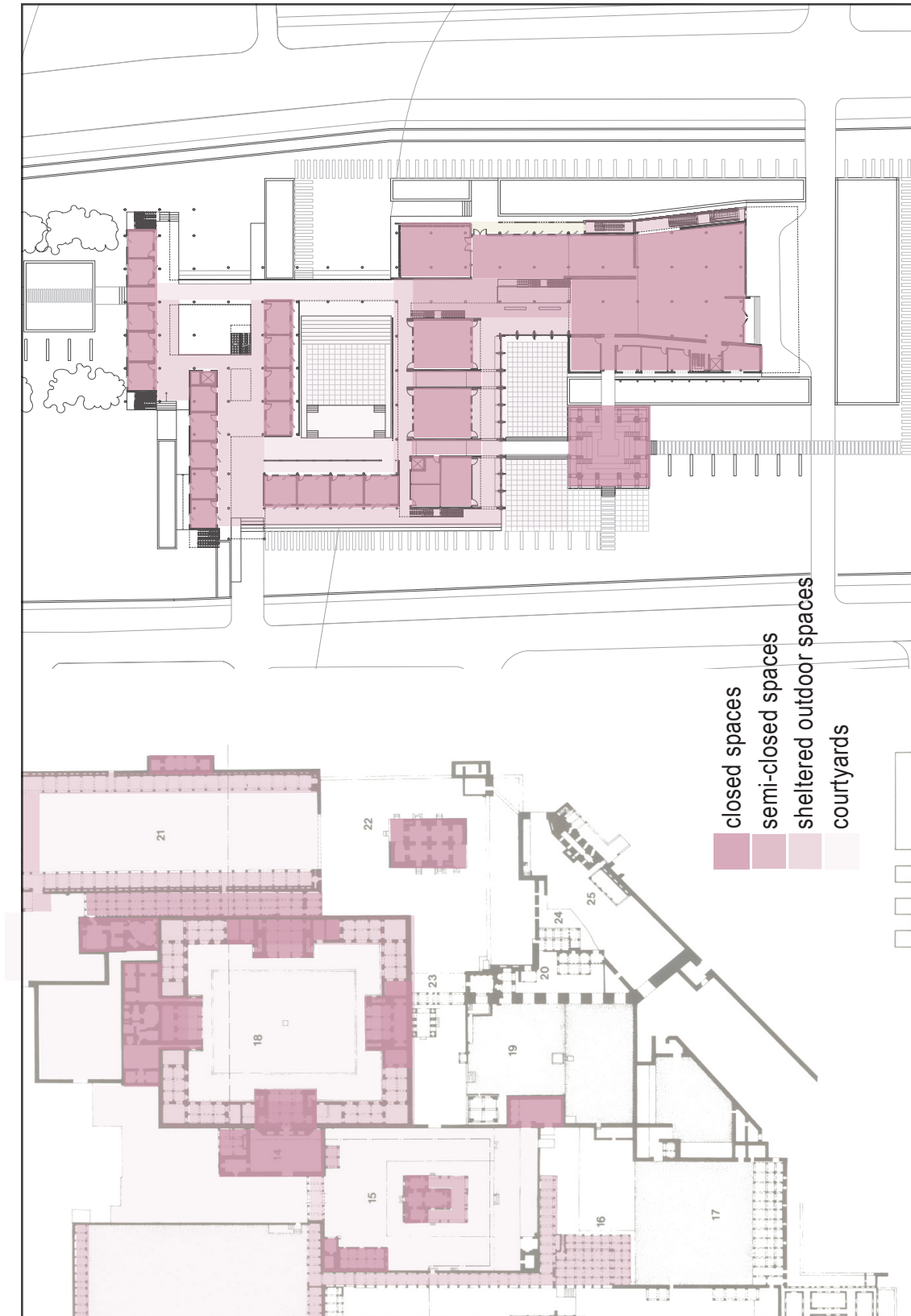


Fig. 49 Plan diagram of Fatehpur Sikri (left) and the performing arts center(right) showing various degrees of enclosure.

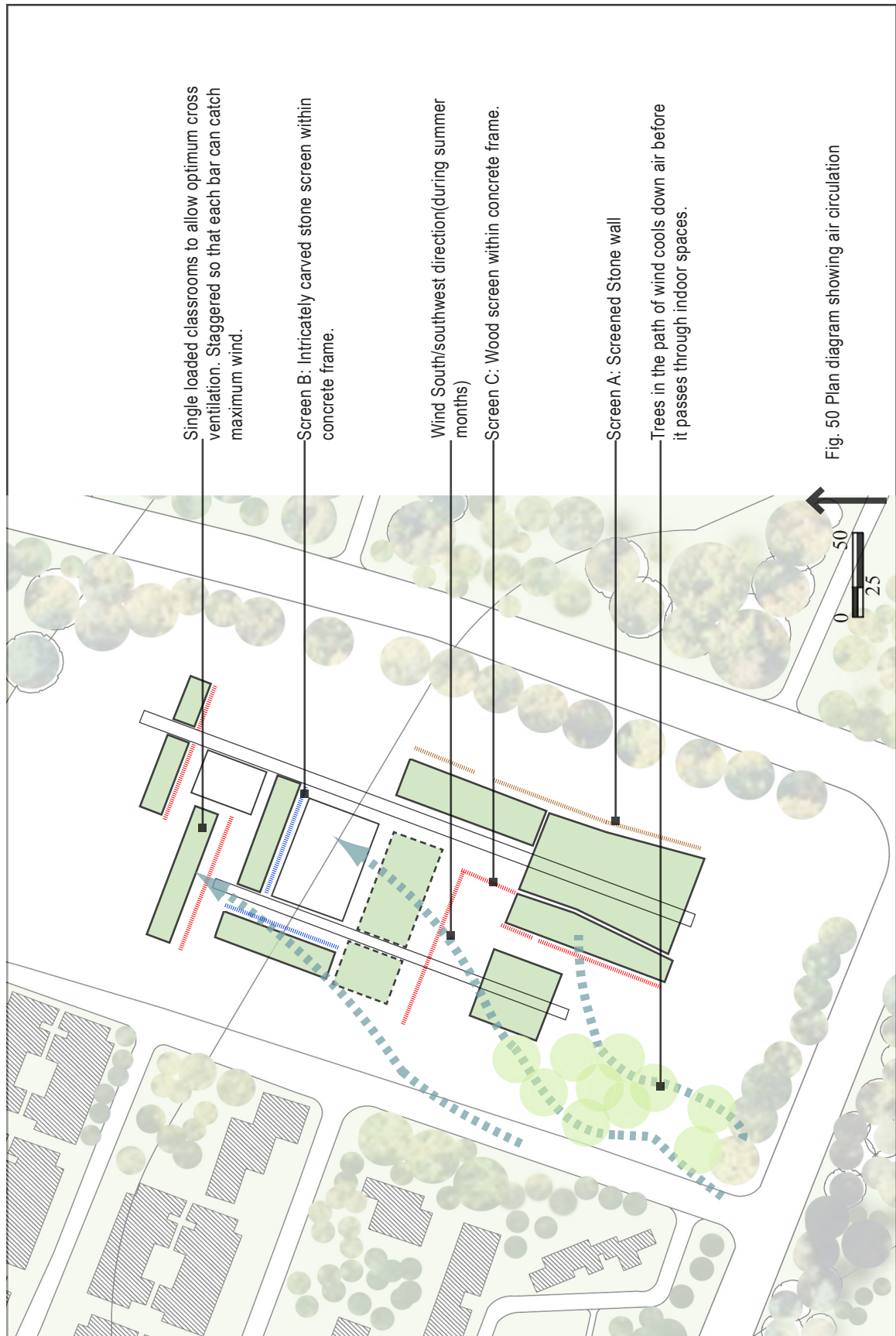


Fig. 50 Plan diagram showing air circulation

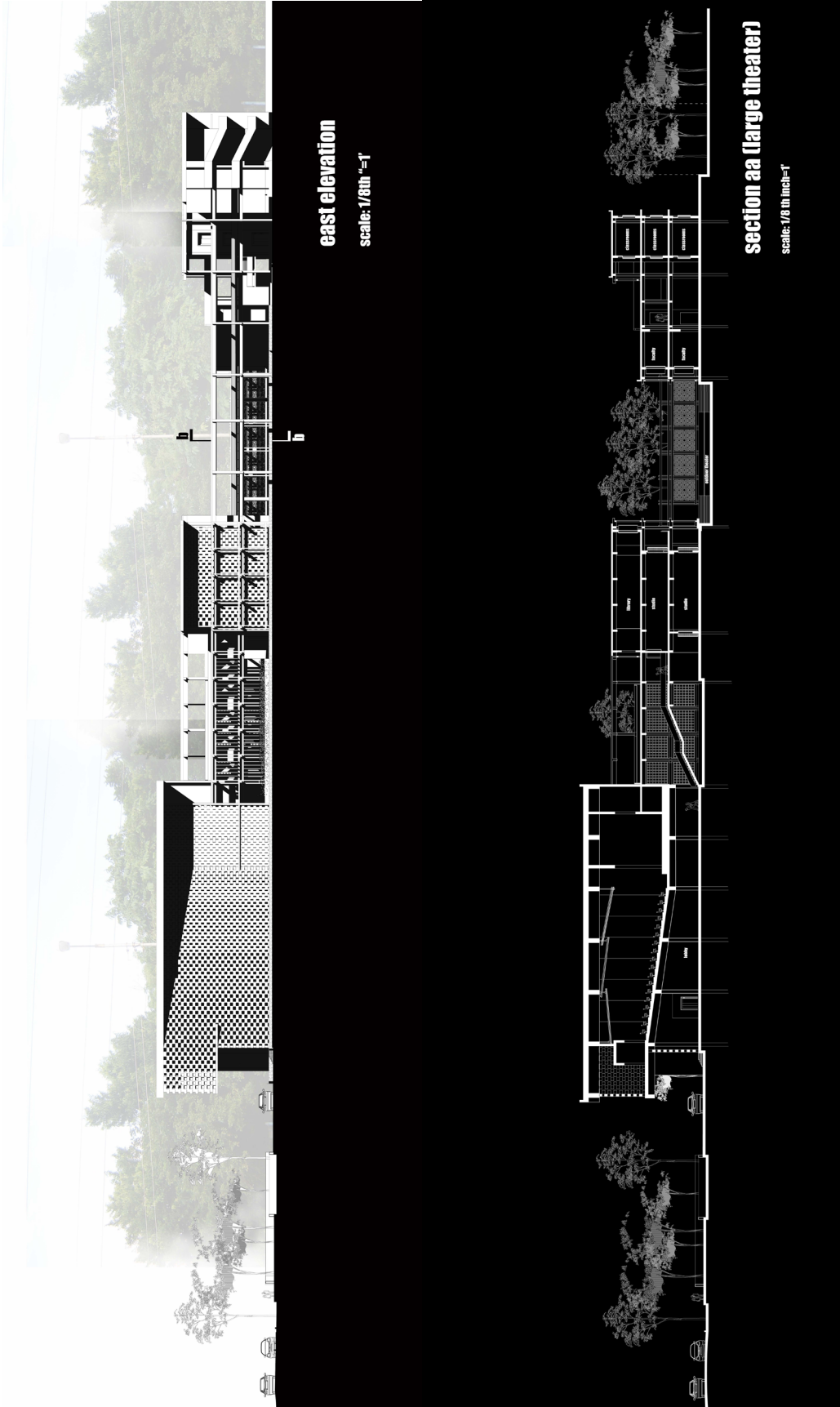


Fig. 51 East elevation and section through the building

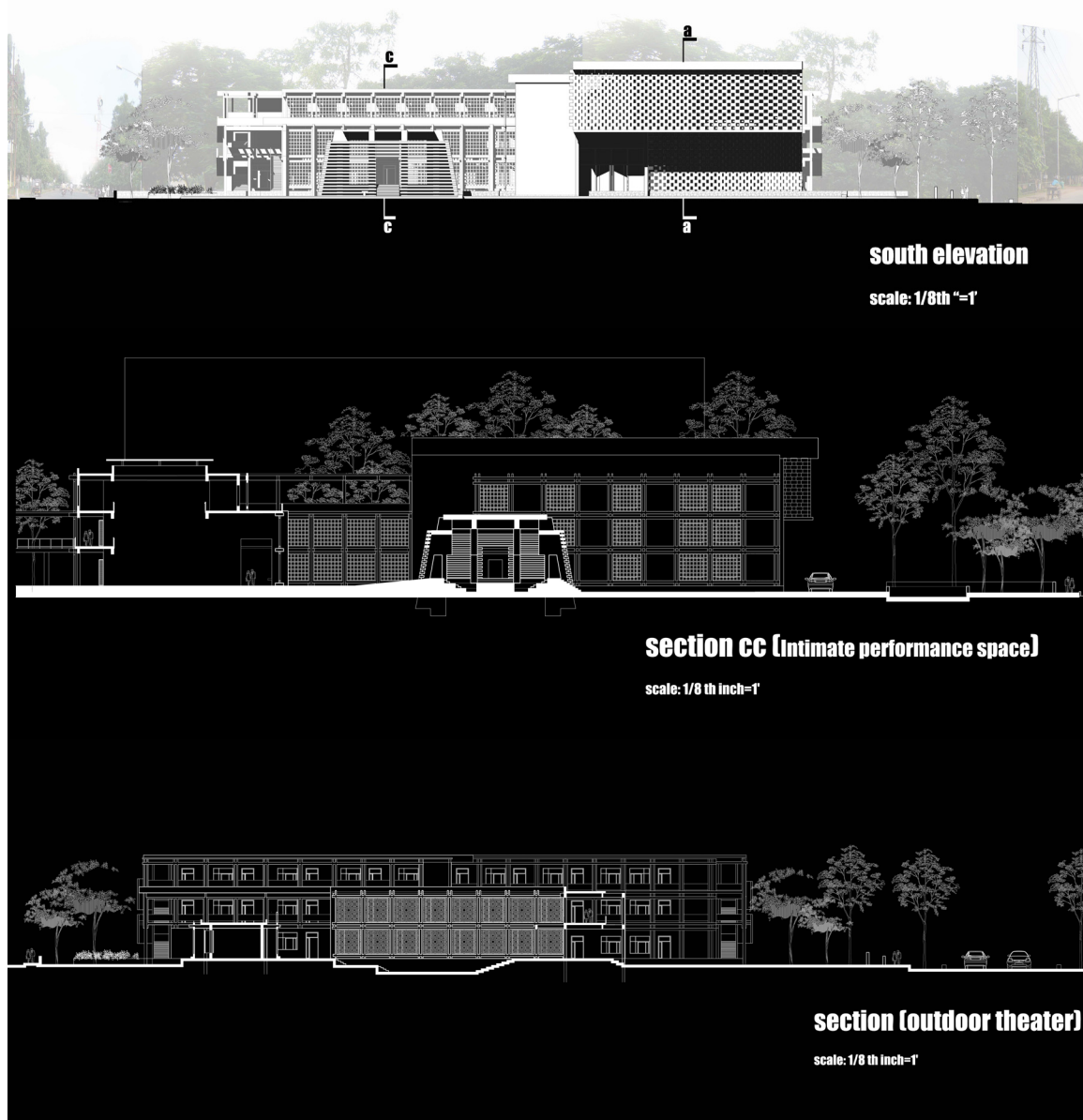


Fig. 52, 53, 54 South elevation, Section BB and Section CC

Climate plays a prominent role in giving identity to any architectural style because the building is designed either to protect us from it or to allow it to enhance our living. Bhubaneswar enjoys mild winter weather but summer is very hot and any shelter from the sun is very comforting. The design of the Performing arts center was guided by such weather conditions. Examples were studied to understand how historic as well as contemporary buildings in India tackle weather conditions. Screens, corridors, trees, water all protect the inhabited spaces from the intense heat and filter sooting light through the spaces and giving a cooling effect. Stone which is prevalent in this region of Orissa was used extensively in the construction of the temple. In the performing arts center, stone is re-introduced and used in a staggering patter.



Fig.55 View of the performing arts center from outside

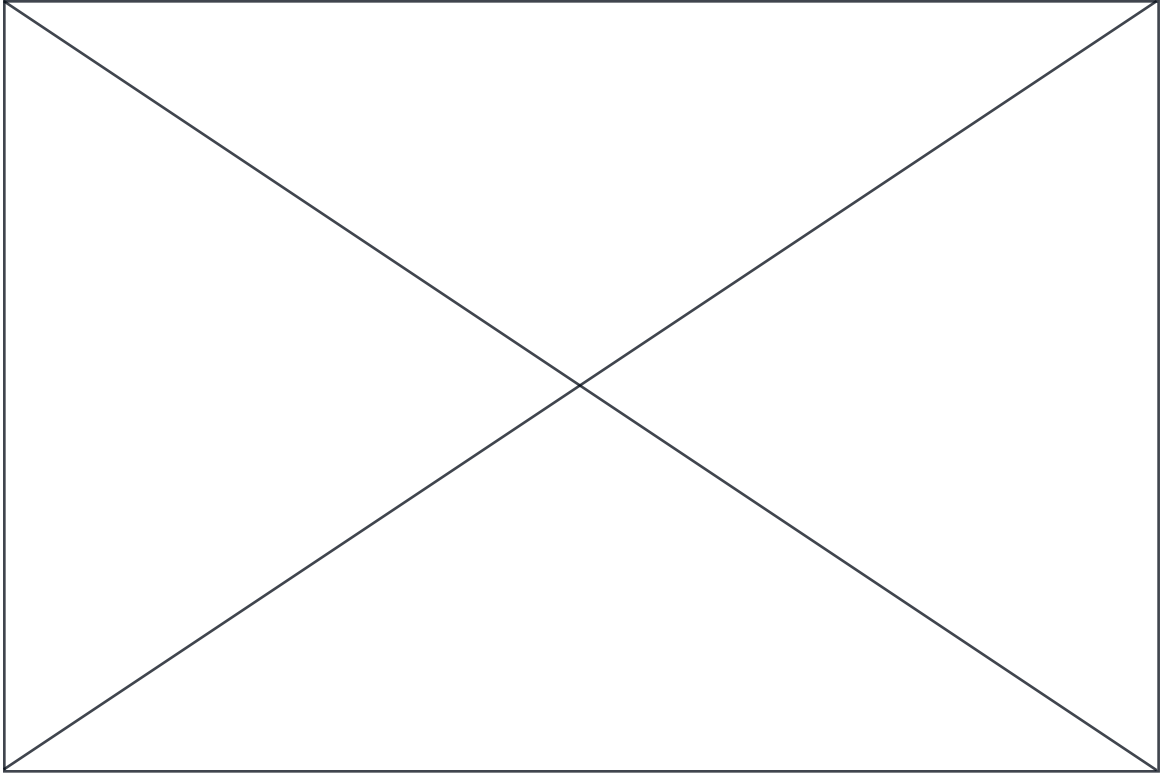


Fig. 56 Screens used in Fatehpur Sikri are used in the performing arts center

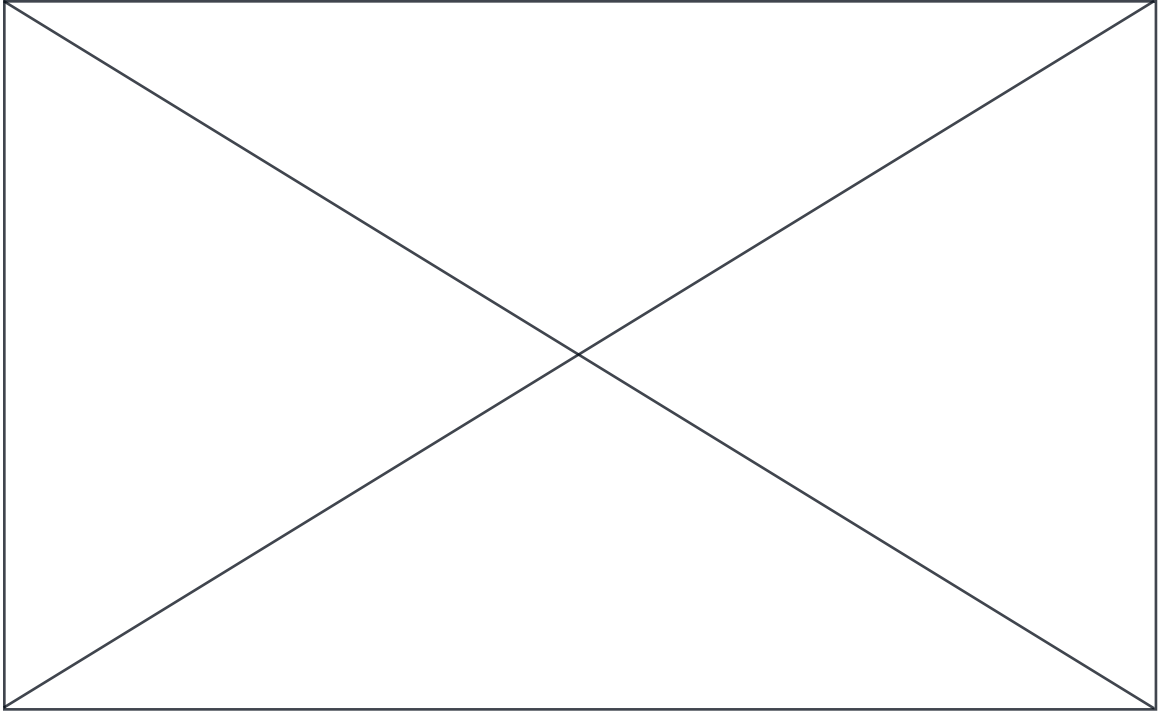


Fig. 57 Contemporary application of stone screen wall by Kengo Kuma

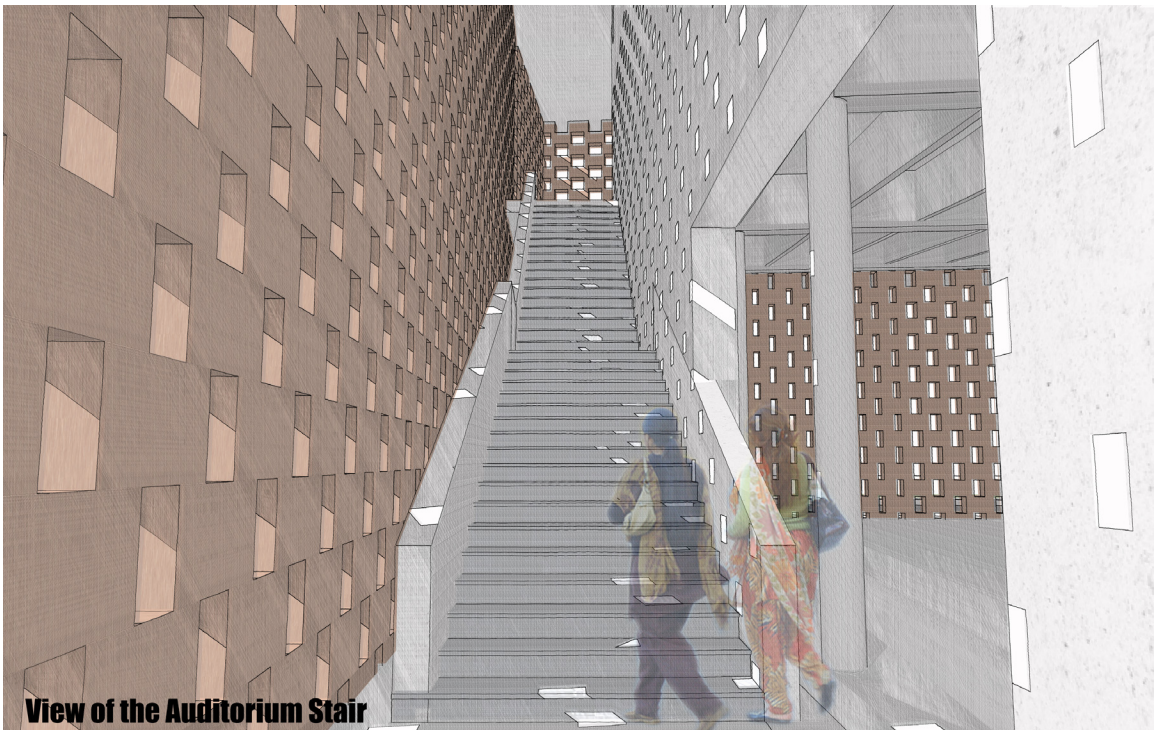


Fig. 58 Stone screen wall at the performing arts center

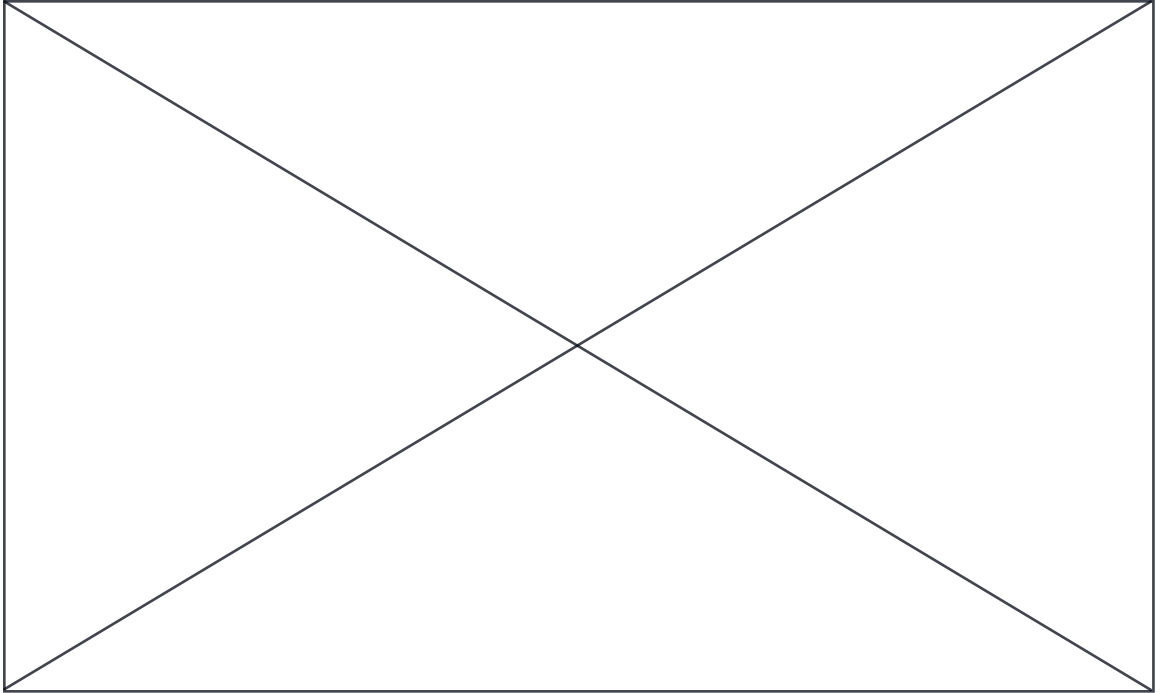


Fig. 59 Outdoor shaded connecting spaces at IIM Bangalore by BV Doshi

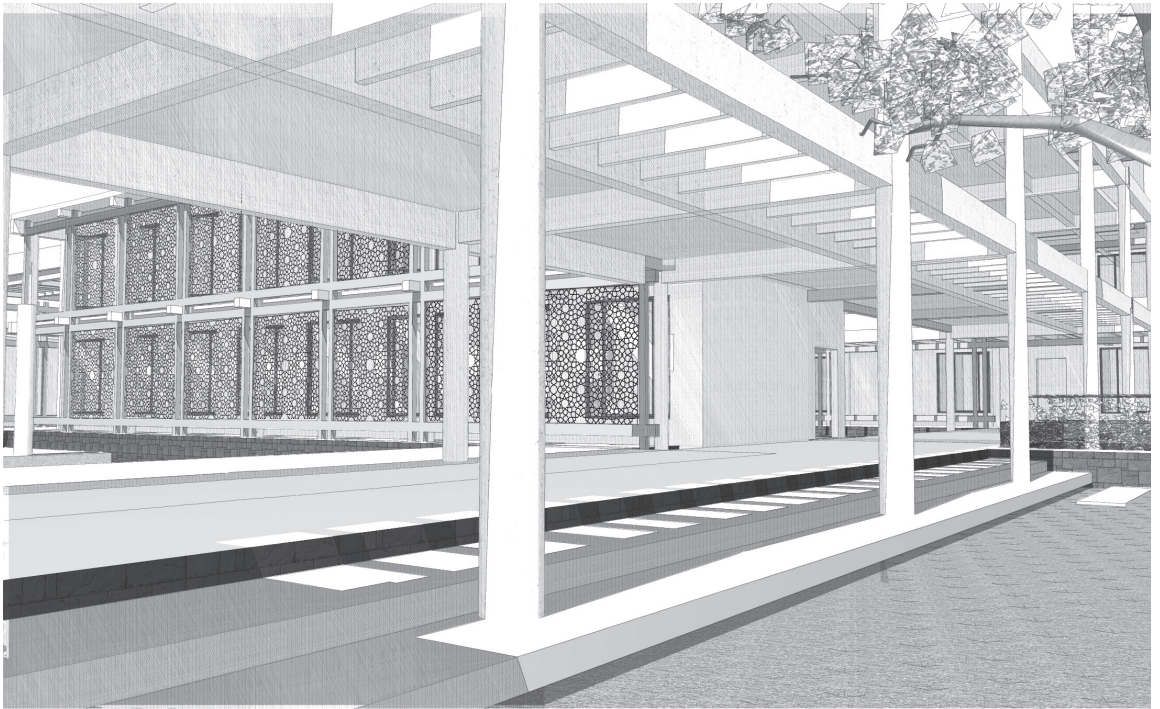


Fig. 60 Outdoor shaded connecting spaces at the performing arts center

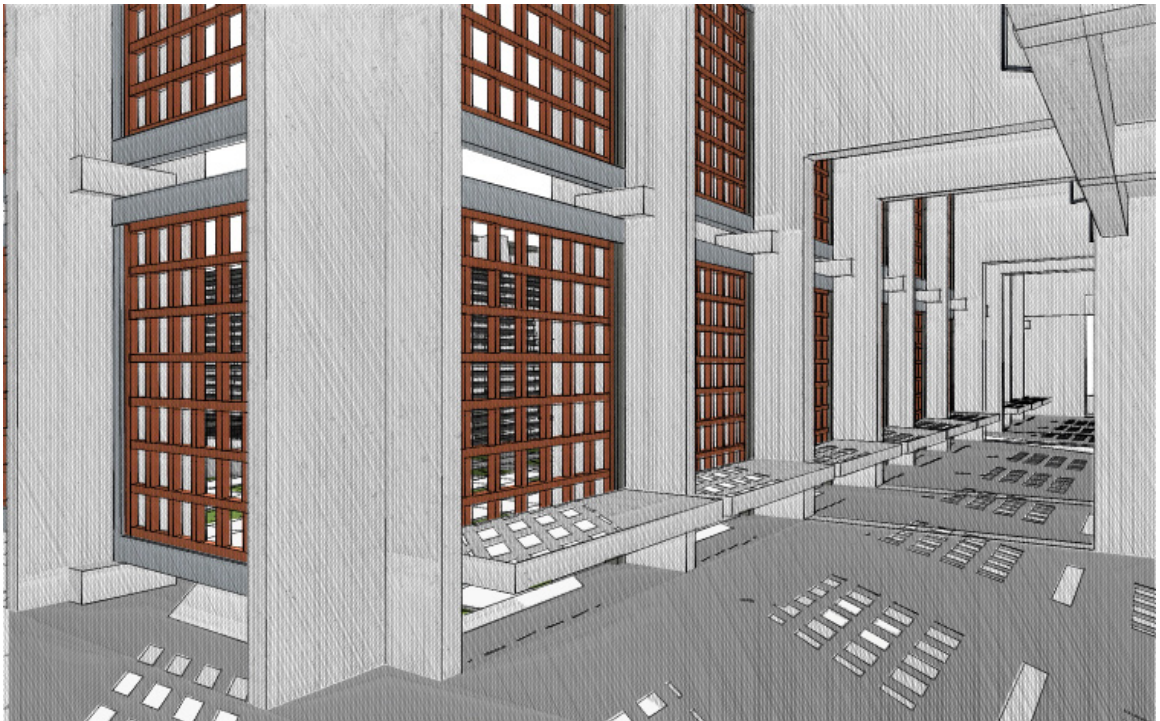
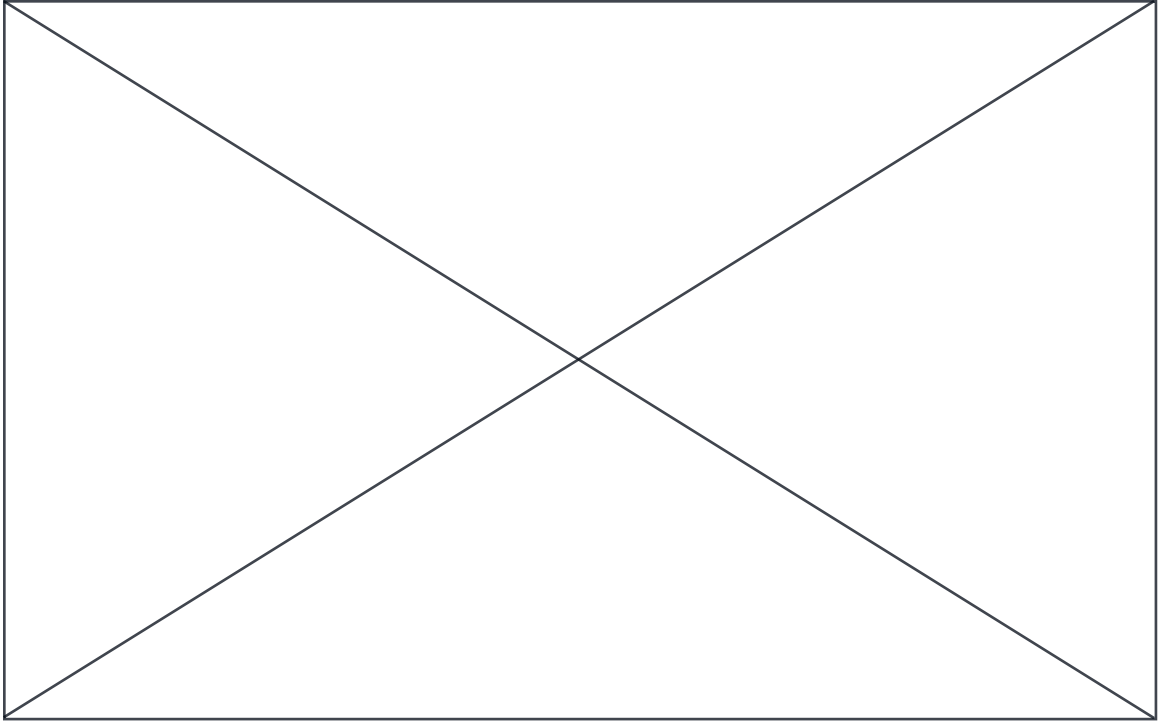


Fig. 61 Application of screens in building in the past and their re interpretation in the performing arts center using wood.

DANCE PAVILION

The design of the dance pavilion re-iterates the traditional dance/assembly pavilion of the hindu temples, in a contemporary manner. In temples, the assembly hall only allowed space for the private ritual dance done by the temple dancers but no viewing area for outside audience. The dance pavilion at the new performing arts center looks for inspiration from the temple architecture but is designed to accommodate viewers to see Odissi dance in a very intimate setting. Seating is provided along the outer walls as the floor steps down 3 levels, and the dancer performs in the center. In the pavilion at performing arts center, concrete stands as the structural bone and stone is used in the form of slats (louvers) to create a screen wall. The screen wall allows the light to filter through the space and the breeze to make it comfortable for the people inside.

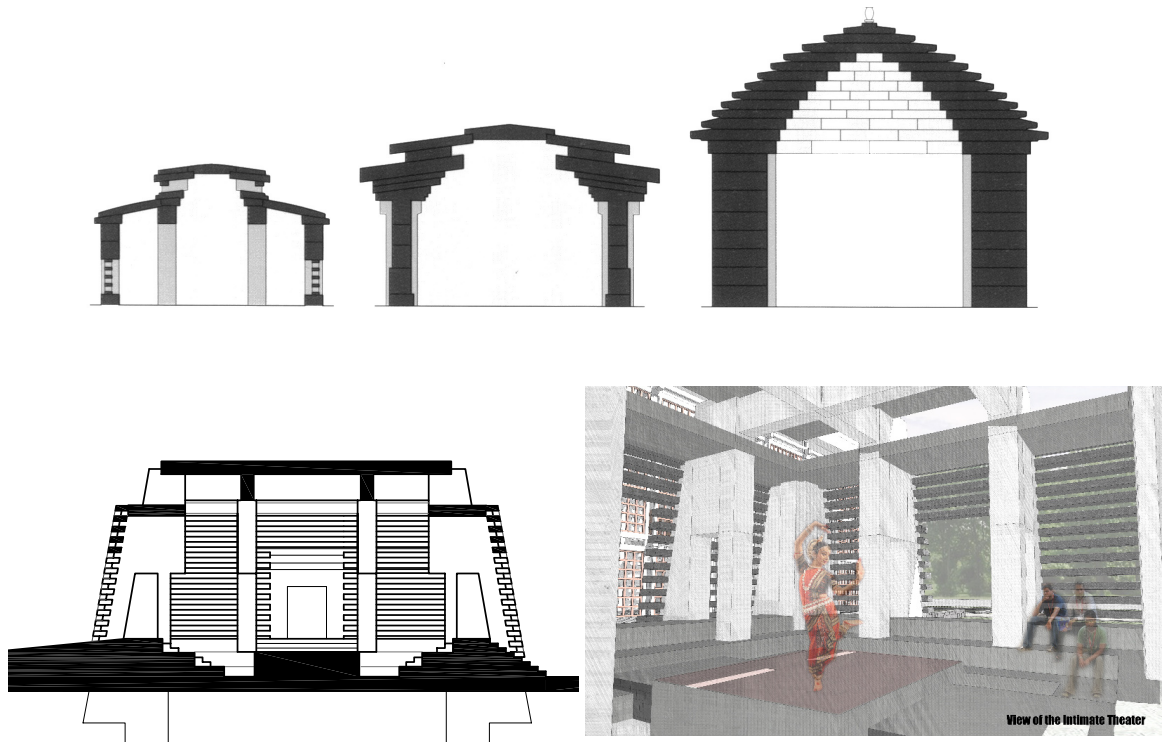


Fig 62 Section showing the development of the mandapa (dance/assembly pavilion) in a series of Hindu temples in Bhubaneswar (source: Stierlin, Pg. 108) and the proposed design for the dance pavilion at the Performing Arts center.

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