



# ANALYSING THE ROLE OF INTERACTIVE DESIGN IN PERFORMING ARTS FOR SENSITIZATION AND ECONOMY DEVELOPMENT

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**Abstract:** With escalating globalisation and multimedia and trend of moving and following western culture and trends we are depleting our cultural traditional heritage value, mostly being intangibles. Over the last few decades number of participation by public is been decreased by 9 percent in performing arts sector of dance theatre and music alone, as published in recent survey. Schemes for financial aids and institution aids are been granted and re-visited by Ministry of Culture, Government of India in XII five year plan to benefit performing arts industry. But the percentage increasing in recent years is minimal. The project so aims to look into the solutions through the interactive methods by introducing collaboration in the performing arts industry like that of Dutch government to increase the role of government and several other collaborating industries which comes under this domain, to increase economy and methods to increase public participation into this industry.

**Index Terms** – Performing Arts Spaces, Interactive Design, Collaborative methods, Government scheme in performing arts.

## I. INTRODUCTION

There are several forms of arts, from which Performing arts is one of the form of arts in which the artist uses their voices, bodies or inanimate objects to convey artistic expression. This form of arts include a range of disciplines which are performed in front of a live audience, which makes is different from that of the visual form of arts, where artist convey their art of expression through paint, canvas or various materials to create physical or static art objects. Performing arts often aims to express one's emotions and feelings.<sup>[1]</sup>

Dance, theatre, music and object manipulation, and other kinds of performances have always been present in all human cultures. The history of music and dance date to pre-historic times whereas circus skills date to at least Ancient Egypt. Many performing arts are performed professionally. Performance can be in purpose built buildings, such as theatres and opera houses, on open air stages at festivals, on stages in tents such as circuses and on the street. Earlier, there have been live performances before the audience only, but as the technology comes up, with the development of audio and video recording, it made these performing arts more private consummating. It then rather affects the performers and the families who have been in this field for generations now and it also distant present generation from these art forms and cultural heritage of their own. Which further took attention to spread awareness and take performing arts to much wider audience, by having more spaces for performing arts, that engage all kinds of people not just the performers.

### 1.1 HISTORY OF PERFORMING ARTS: (INDIA)

Folk theatre and dramatics can be traced to the religious ritualism of the Vedic peoples in the 2nd millennium BC. This folk theatre of the misty past was mixed with dance, food, ritualism, plus a depiction of events from daily life. The last element made it the origin of the classical theatre of later times. Many historians, notably D. D. Kosambi, Debiprasad Chattopadhyaya, Adya Rangacharya, etc. have referred to the prevalence of ritualism amongst Indo-Aryan tribes in which some members of the tribe acted as if they were wild animals and some others were the hunters. Those who acted as mammals like goats, buffaloes, reindeer, monkeys, etc. were chased by those playing the role of hunters.

Bharata Muni was an ancient Indian writer best known for writing the Natya Shastra of Bharata, a theoretical treatise on Indian performing arts, including theatre, dance, acting, and music, which has been compared to Aristotle's Poetics. Bharata is often known as the father of Indian theatrical arts. His Natya Shastra seems to be the first attempt to develop the technique or rather art, of drama in a systematic manner. The Natya Shastra tells us not only what is to be portrayed in a drama, but how the portrayal is to be done. Drama, as Bharata Muni says, is the imitation of men and their doings (loka-vritti). As men and their doings have to be respected on the stage, so drama in Sanskrit is also known by the term "roopaka", which means portrayal.

The Ramayana and Mahabharata can be considered the first recognized plays that originated in India. These epics provided the inspiration to the earliest Indian dramatists and they do it even today. Indian dramatists such as Bhāsa in the 2nd century BC wrote plays that were heavily inspired by the Ramayana and Mahabharata.

Kālidāsa in the 1st century BC, is arguably considered to be ancient India's greatest dramatist. Three famous romantic plays written by Kālidāsa are the Mālavikāgnimitram (Mālavikā and Agnimitra), Vikramōrvāśiyam (Pertaining to Vikrama and Urvashi), and Abhijñānaśākuntala (The Recognition of Shakuntala). The last was inspired by a story in the Mahabharata and is the most famous. It was the first to be translated into English and German. In comparison to Bhāsa, who drew heavily from the epics, Kālidāsa can be considered an original playwright.

The next great Indian dramatist was Bhavabhuti (c. 7th century). He is said to have written the following three plays: Malati-Madhava, Mahaviracharita and Uttar Ramacharita. Among these three, the last two cover between them, the entire epic of Ramayana. The powerful Indian emperor Harsha (606–648) is credited with having written three plays: the comedy Ratnavali, Priyadarshika, and the Buddhist drama Nagananda. Many other dramatists followed during the Middle Ages.

There were many performing art forms in the southern part of India, Kerala is such a state with different such art forms like Koodiyattam, Nangyarkoothu, Kathakali, Chakyar koothu, Thirayattam and there were many prominent artists like Painkulam Raman Chakyar and others.<sup>[2]</sup>

## 1.2 TYPES PERFORMING ARTS:

### Music

Music is the art of sound in time, expressing ideas and emotions in significant forms through the elements of melody, harmony and colour. Tones or sound occurring either in, in a single line i.e. melody or in multiple lines i.e. harmony and the feeling of movement of sound in time i.e. rhythm are the essential elements of music.<sup>[3]</sup>

Types of Music: (India)	Types of Classical Music: (India)
<ul style="list-style-type: none"> <li>Classical Music</li> <li>Light Classical Music</li> <li>Folk Music</li> <li>Popular Music</li> <li>Jazz And Blue Music</li> <li>Western Classical Music</li> </ul>	<ul style="list-style-type: none"> <li>Hindustani Music</li> <li>Carnatic Music</li> </ul>

Table 1: Types of Music

The classical forms of the Indian Classical Music have emerged from a common ancestor, so they have more similarities than differences. Around 12<sup>th</sup> century through the influence of Islamic rule in the Northern part of India, these two were recognised as two distinct forms of classical music. Classical Indian Music in the Northern part of the country which was occupied by the Mughals evolved into Hindustani Music and in the Southern part, the remaining that was occupied by Hindu kings, the music evolved into Carnatic Music.

**Hindustani Music:** Hindustani Classical Music was not only influenced by Ancient (hindu) Musical Traditions and Vedic philosophy, but is also influenced by the Persian Elements. It is based on the Raga system. The Raga is a melodic scale, comprising of basic notes with Sa, Re, Ga, Ma, Pa, Dha and Ni. Apart from Sa and Pa, which are constant, the other notes may be major and minor tone, and with this numerable combinations are raised. There are ten basic scales (thaats) recognised, and other are ragas considered to have evolved from these. A raga must contain a minimum of five notes.

**Carnatic Music:** The Carnatic music is very highly developed in the theoretical system. This is mainly due to the contributions of scholar artists such as Purandara Dasa, known as the Father of Carnatic Music. The music is based upon a complex system of Ragas (Ragam) and Tala (Thalam). Though Carnatic Music has the Raga but unlike a simple scale alone there are definite melodic restrictions and compulsions. The Ragas are classified into various modes, referred to as Mela, which are 72 in number. Tala is the rhythmic foundation of the Carnatic music.

### Dance

Dance, the movement of the body in a rhythmic way, usually to music and within a given space, for the purpose of expressing an idea or emotion, releasing energy, or simply taking delight in the movement itself. Dance is a powerful impulse, but the art of dance is that impulse channeled by skillful performers into something that becomes intensely expressive and that may delight spectators who feel no wish to dance themselves. These two concepts of the art of dance—dance as a powerful impulse and dance as a skillfully choreographed art practiced largely by a professional few—are the two most important connecting ideas running through any consideration of the subject. In dance, the connection between the two concepts is stronger than in some other arts, and neither can exist without the other.<sup>[3]</sup>

Types of Dance: (India)	Types of Classical Dance:(India)
<ul style="list-style-type: none"> <li>Classical Dance</li> <li>Semi Classical Dance</li> <li>Folk Dance</li> <li>Western Dance</li> </ul>	<ul style="list-style-type: none"> <li>Bharatnatyam</li> <li>Kathak</li> <li>Kathakali</li> <li>Kuchipudi</li> <li>Manipuri</li> <li>Odissi</li> <li>Mohiniyattam</li> <li>Sattriya</li> </ul>

Table 2: Types of Dance

**BHARATNATYAM:** This dance form was originated in the temples and courts of southern India. This dance form was only used to be performed in the temples, not on stage or even outside the temples. E. Krishna Iyer and Rukmini Devi Arundale bought this temple dance to the society and to get it started to be performed on stage.

**KATHAK:** This dance form was originated from the groups of poets of northern India, known as Kathaks or story tellers. They use to perform in village squares and temple courtyards, mostly specialized in mythological and moral tales from the scriptures. In the time period of Mughal culture, kathak became a sophisticated chamber art and then recoiled into its dramatic and rhythmic footwork. Kathak Gharana- Lucknow Gharana and Banaras Gharana.

**KATHAKALI:** Kathakali is one of the oldest theatre forms in the world. It originated in southwestern India, presently known as the state of Kerala. Kathakali is a dance form which is performed in the group presentation format, in which dancers take various roles in performances traditionally based on themes from Hindu mythology, majorly, Ramayana and Mahabharata.

**KUCHIPUDI:** Kuchipudi is Classical Indian Dance form from Andhra Pradesh, India. The name Kuchipudi has its origin from the name of a village 'KUCHELAPURAM' with resident Brahmins practicing the dance form at Andhra Pradesh. It is not only performed on Carnatic classical music but it is also performed on the Hindustani classical music. Kuchipudi shares many common elements with Bharatanatyam.

**MANIPURI:** Manipuri dance form originated from state Manipur, in Northeast India. This dance style is inextricably woven into the life pattern of Manipuri people. The most striking part of Manipur dance is its colorful decoration, lightness of dancing foot, delicacy of abhinaya (drama), lilting music and poetic charm. The Manipuri dance form is mostly ritualistic and draws heavily from the rich culture of the state of Manipur.

**ODISSI:** Odissi is one of the classical Indian dances from Orissa state. The history of Odissi dance is almost two thousand years old. It is a highly inspired, passionate, ecstatic and sensuous form of dance. Like most of the South Indian classical dances of India Odissi too had its origin in the Devadasi tradition: the divine love tales of Radha and cowherd for God Krishna are commonly used themes for interpretation in this dance form.

**MOHINIYATTAM:** Mohiniyattam is the dance form which is been originated in region of Kerala in southwestern India. The meaning of the word Mohiniyattam is 'Dance of the Enchantress'. Mohiniyattam was female oriented art form earlier, but is been performed by male artists in last a few decades. It is not just performed on mythological themes but on the themes of nature also.

**SATTRIYA:** Sattras are the Vaishnava monasteries in Assam and Sattriya dance style is been originated by the Saint poet Shankar Deva of the 15<sup>th</sup> century AD. He started this institution to bring harmony to the region of Assam through religion, creating forms of music, dance-drama, painting and collective prayer. The dance form comes up to stay called Sattriya dances, sharing all the characteristics of a classical dance form.

## Theatre

Theatre or theatre is a collaborative form of fine art that uses live performers, typically actors or actresses, to present the experience of a real or imagined event before a live audience in a specific place, often a stage. The performers may communicate this experience to the audience through combinations of gesture, speech, song, music, and dance. Elements of art, such as painted scenery and stagecraft such as lighting are used to enhance the physicality, presence and immediacy of the experience. The specific place of the performance is also named by the word "theatre" as derived from the Ancient Greek θέατρον (théatron, "a place for viewing"), itself from θεάομαι (theáomai, "to see", "to watch", "to observe").<sup>[4]</sup>

### Oldest Indian Traditional Theatre:

**Sanskrit Theatre:** The Sanskrit theatre and drama emerged in the first century, CE and went on till the tenth century. Not only was Sanskrit the language of the elite and educated; the Sanskrit dramas equally dense with poetic devices, literary, mythic, and historical allusion, and literary devices and ornaments of all sorts. Furthermore, the stories that the plays dramatize tend to reinforce upper-class authority and values. At first glance, the Sanskrit dramas seem to be very exclusive. On the other hand, there isn't all that much Sanskrit in Sanskrit dramas. Only the most elite characters in the plays—divine beings, kings, and brahmans—speak Sanskrit. Other characters, including soldiers, merchants, townspeople, etc., and very nearly all women, speak a variety of colloquial languages referred to, collectively, as Prakrits\*.<sup>[5]</sup> Sanskrit dramas, therefore, must have appealed to a relatively diverse audience. The plays include so much Prakrit dialogue that the wider population of people who could not access Sanskrit would, nevertheless, have been able to follow a performance fine.

The most commonly read and performed examples of Sanskrit drama include plays by Bhasa, Shudraka, and, especially, Kalidasa. The work of all three of these playwrights comes within the first three or four centuries of the tradition.

Besides the dramatic literature that survives from the period, the tradition of Sanskrit theatre gives us some practical information about play performance and also a theory about how we experience theatre.

The Natyashastra, an encyclopedic volume dating from between the first and fourth centuries, CE, touches on almost every practical aspect of theatrical art, and it speculates in a theoretical-philosophical way about how theatre affects an audience. The concept it dubs *rasa* is still essential to Indian aesthetics.

### 1.3 NATYA SHAstra: (Says to be Bible of Indian Classical Performing Arts)

The Natyashastra, written by Bharata Muni during first to fourth century has laid the structure of music, dance and drama. Natyashastra is fundamental to all Indian aesthetics as it is the oldest surviving text on stage craft. The text consists of 36 chapters with a cumulative total of 6000 poetic verses describing performance arts. The subjects covered by the treatise include dramatic composition, structure of a play and construction of a stage to host it, genres of acting, body movements, make up and costumes, role and goals of an art director, the musical scales, musical instruments and the integration of music with art performance.

The Natyashastra's primary concerns are not philosophical or theoretical; rather, the text spends most of its time elucidating how theatre is done, from the construction of theatre buildings, to the application of make-up, to the design and building of props, to arm movement, foot movement, eye movement, with additional chapters on music and audience appreciation. The names and succession of chapters vary in different manuscripts. According to Manomohan Ghosh Edition;

Chapter 1 describes the genesis of drama; chapter 2, the characteristics of the playhouse; chapter 3, the pūjā for the consecration of a new theater; chapter 4, techniques of the Tāṇḍava dance; chapter 5, the ritual of pūrvvaraṅga; chapter 6, the theory of rasa; chapter 7, the definition of bhāva; chapter 8, facial mimics and differentiation of glances; chapter 9, hand gestures (single, combined, dance); chapter 10, acting techniques for body limbs and feet position; chapter 11, basic steps, standing postures, and positions with weapons; chapter 12, combined steps and movements; chapter 13, types of scenic gaits; chapter 14, stage zones and conventions, local theatrical customs; chapter 15, the theory of prosody, Sanskrit recitation, and metrical patterns; chapter 16, examples of metrical patterns; chapter 17, attributes of poetry and figures of speech; chapter 18, Prākṛt recitation; chapter 19, modes of addressing and enunciation; chapter 20, ten kinds of play; chapter 21, structure of a plot; chapter 22, basic models of scenic representation; chapter 23, stage properties, costumes, and make-up; chapter 24, female theater; chapter 25, definition of women of easy virtue and amorous men; chapter 26, various representations; chapter 27, success of the drama; chapter 28, general description of Gāndharva music; chapter 29, basic melody types and music parts of pūrvvaraṅga; chapter 30, hollow instruments; chapter 31, time-measure, stage songs, and their application in female performance; chapter 32, dhruvā songs; chapter 33, covered instruments (drums); chapter 34, types of characters; chapter 35, distribution of roles, ideal troupe; chapter 36, descent of drama on earth.

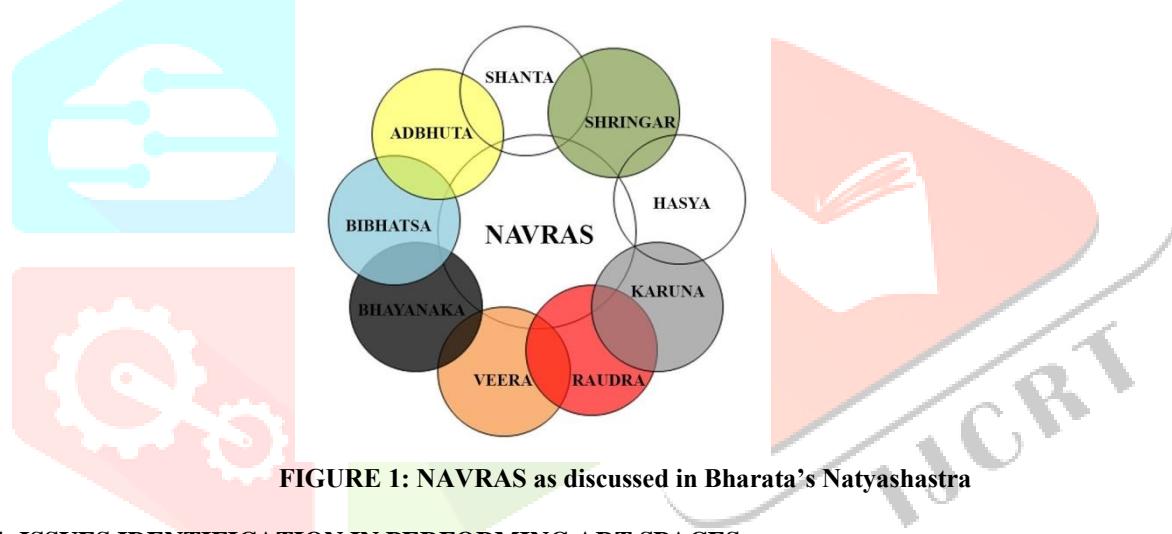


FIGURE 1: NAVRAS as discussed in Bharata's Natyashastra

### 1.4 ISSUES IDENTIFICATION IN PERFORMING ART SPACES:

#### 1.4.1 Decreased Public Participation and Increased Unemployment

According to a survey on public participation by the National Endowment for the Arts in different performing arts sectors, there is a major drop in the footfall of public in all the performing arts spaces. Survey suggests issue is not just national; it is highly declining on International level as well.

The declined footfall of public participation is further affecting in terms of lack of employment, not just for the Artists but for people of different sectors associated to this industry.

#### 1.4.2 Lack of Awareness

Another major issue is lack of Awareness amongst public, special concern is amongst young generation. UNESCO suggests due to globalisation many music traditions have been adapted to fit western forms of notation so they may be recorded, or for the purpose of education, but this process can be destructive for intangible traditional heritage.

#### 1.4.3 Lack of Infrastructure and facilities

As per the survey floated\* (amongst 200 people in each cities Delhi, Varanasi and Lucknow), result suggests: lack of infrastructure and facilities for performers and for audience, lack of spaces to engage them there apart from the performances.

### 1.5 NEED OF THE PROJECT:

The project is needed to analyse and find solutions for increasing footfall and public participation in performing arts to increase the economic growth of the this industry and various stake holders related to this industry.

The research paper required to analyze the role of collaborative interactive designing methods that can be in cooperated to solve the issues mentioned.

**1.6 AIM:**

The aim of the project is to sensitize people about intangible traditional heritage of the country and generate employment for various sectors of employees connected to performing arts industry by analysing the role of interactive design in performing arts spaces.

**1.7 OBJECTIVE:**

- 1) Understanding the various factors for decreased popularity of Performing Arts over a past few decades.
- 2) Evaluation of corrective measures taken by government.
- 3) Understanding interactive design: its principles and elements and role of interactive design concepts and parameters worldwide.
- 4) Analysing and formulating design spaces and design considerations in Performing Art spaces.

**1.8 METHODOLOGY:**

- 1) Studying articles and papers on the decreased rate in public participation and reasons for decreased popularity of performing arts nationally and internationally, to understand their factors.
- 2) Studying government data and the schemes run by government on Central and State level, to evaluate the corrective measures taken by government.
- 3) Studying research papers, books and articles on Interactive Design to understand its design principles, elements and the concept worldwide.
- 4) Running survey to understand the need of performer and audience both and collaborating it with the analysis.

**1.9 SCOPE:**

- To benefit and provide data base to the organisations that are into this field study.
- To provide base for study for organisation of different other domains.
- To provide data on the individual basis study and research.

**II. DECREASED PUBLIC PARTICIPATION IN PERFORMING ARTS**

The performing arts range from vocal and instrumental music, dance and theatre to pantomime, sung verse and beyond. They include numerous cultural expressions that reflect human creativity and that are also found, to some extent, in many other intangible cultural heritage domains. Music is perhaps the most universal of the performing arts and is found in every society, most often as an integral part of other performing art forms and other domains of intangible cultural heritage including rituals, festive events or oral traditions. It can be found in the most diverse contexts: sacred or profane, classical or popular, closely connected to work or entertainment. There may also be a political or economic dimension to music: it can recount a community's history, sing the praises of a powerful person and play a key role in economic transactions. The occasions on which music is performed are just as varied: marriages, funerals, rituals and initiations, festivities, all kinds of entertainment as well as many other social functions.

Dance, though very complex, may be described simply as ordered bodily movements, usually performed to music. Apart from its physical aspect, the rhythmic movements, steps and gestures of dance often express a sentiment or mood or illustrate a specific event or daily act, such as religious dances and those representing hunting, warfare or sexual activity. Traditional theatre performances usually combine acting, singing, dance and music, dialogue, narration or recitation but may also include puppetry or pantomime. These arts, however, are more than simply 'performances' for an audience; they may also play crucial roles in culture and society such as songs sung while carrying out agricultural work or music that is part of a ritual. In a more intimate setting, lullabies are often sung to help a baby sleep. The instruments, objects, artefacts and spaces associated with cultural expressions and practices are all included in the Convention's definition of intangible cultural heritage. In the performing arts this includes musical instruments, masks, costumes and other body decorations used in dance, and the scenery and props of theatre. Performing arts are often performed in specific places; when these spaces are closely linked to the performance, they are considered cultural spaces by the Convention. Many forms of performing arts are under threat today. As cultural practices become standardized, many traditional practices are abandoned. Even in cases where they become more popular, only certain expressions may benefit while others suffer.

Music is perhaps one of the best examples of this, with the recent explosion in the popularity of 'World Music'. Though it performs an important role in cultural exchange and encourages creativity that enriches the international art scene, the phenomenon can also cause problems. Many diverse forms of music may be homogenized with the goal of delivering a consistent product. In these situations, there is little place for certain musical practices that are vital to the process of performance and tradition in certain communities.

Music, dance and theatre are often key features of cultural promotion intended to attract tourists and regularly feature in the itineraries of tour operators. Although this may bring more visitors and increased revenue to a country or community and offer a window onto its culture, it may also result in the emergence of new ways of presenting the performing arts, which have been altered for the tourist market. While tourism can contribute to reviving traditional performing arts and give a 'market value' to intangible cultural heritage, it can also have a distorting effect, as the performances are often reduced to show adapted highlights in order to meet tourist demands. Often, traditional art forms are turned into commodities in the name of entertainment, with the loss of important forms of community expression. In other cases, wider social or environmental factors may have a serious impact on performing art traditions. Deforestation, for example, can deprive a community of wood to make traditional instruments used to perform music. Many music traditions have been adapted to fit western forms of notation so they may be recorded, or for the purpose of education, but this process can be destructive. Many forms of music use scales with

tones and intervals that do not correspond to standard western forms and tonal subtleties may be lost in the process of transcription. As well as music being homogenized, changes to traditional instruments to make them more familiar or easier to play for students, such as the addition of frets to stringed instruments, fundamentally alter the instruments themselves. Safeguarding measures for traditional performing arts should focus mainly on transmission of knowledge and techniques, of playing and making instruments and strengthening the bond between master and apprentice. The subtleties of a song, the movements of a dance and theatrical interpretations should all be reinforced.

Performances may also be researched, recorded, documented, inventoried and archived. There are countless sound recordings in archives all around the world with many dating back over a century. These older recordings are threatened by deterioration and may be permanently lost unless digitized. The process of digitization allows documents to be properly identified and inventoried.

Cultural media, institutions and industries can also play a crucial role in ensuring the viability of traditional forms of performing arts by developing audiences and raising awareness amongst the general public. Audiences can be informed about the various aspects of a form of expression, allowing it to gain a new and broader popularity, while also promoting connoisseurship which, in turn, encourages interest in local variations of an art form and may result in active participation in the performance itself.

Safeguarding may also involve improvements in training and infrastructure to properly prepare staff and institutions for preserving the full range of performing arts. In Georgia, students are trained in anthropological fieldwork methods as well as how to record polyphonies, allowing them to create the foundations of a national inventory by creating a database.

### III. GOVERNMENT INITIATIVES FOR PERFORMING ARTS

#### 3.1 Central Level

##### 3.1.1 Art as curricular and compulsory subject in school education: NCERT:

It suggests: The primary purpose of Art Education is to develop creativity, individuality and expression holistically through incalculable art-related activities. Art Education fosters both cultural awareness and cultural practices, and is the only means by which knowledge and appreciation of the arts and culture are transmitted from one generation to the next. Education, as a planned endeavor, at a personal level on a small scale or institutional level on a large scale, aims at making children capable of becoming knowledgeable, responsible, productive, and caring members of society. They are made familiar with the various practices of the community by learning the relevant skills and ideas. An educationist encourages students to analyze and evaluate their experiences, to doubt, to question, to investigate or in other words, be inquisitive and to think independently. Education must, therefore, instill a sense of reasoning and promote and nourish as wide a range of capacities and skills in children as possible. It gives children some taste of understanding, following which they would be able to learn and create their own versions of knowledge as they go out to meet the world of bits, images and transactions of life. Such a taste would make the present of children wholesome, creative and enjoyable; an understanding of the Arts of the country will give youth the ability to appreciate the richness and variety of artistic traditions as well as make them liberal, creative thinkers and good citizens of the nation. Arts in India are living examples of its secular fabric and cultural diversity. Thus, educating through Arts will enrich the lives of young citizens not merely during their school years, but all through their lifetime.

There is always a considerable difference between the lexical and the practical usage of several terms used. Art expressions in particular, face a greater ambiguity than several provincial words. It is important to acknowledge the fact that even if terms such as "dance", "music", "drama" and "poetry" are used world-wide, the deeper meanings of such words differ among different cultures. Thus, any list of art fields must be seen as a pragmatic categorization, ever evolving and never exclusive. The arts should be gradually introduced to learners through artistic practices and experiences that maintain the value of not only the result of the process, but the process itself. Furthermore, since many art forms cannot be limited to one discipline, the interdisciplinary aspect of arts, and the commonalities among them, must be given more emphasis too.

A pertinent query arose as to the characteristics of each art form and artistic means to practice communication and to interact within various cultural, social and historical contexts. In this regard, there are two main approaches to Arts Education, which can be implemented at the same time and need not be distinct. The Education in Arts can be (1) taught as individual study subjects, through the teaching of the various arts disciplines, thereby developing students' artistic skills, sensitivity, and appreciation of the arts, (2) seen as a pedagogical process in artistic and cultural dimensions included across curriculum. Art education utilizes the arts as a medium for teaching general curriculum subjects and as a way to deepen understanding of these subjects. Drawing on the theory of 'multiple intelligences,' Art education aims to extend the benefits to all students and subjects. This approach also aims to contextualize theory through the practical application of artistic disciplines.

The Government of India has brought out The Right of Children to Free and Compulsory Education Act as a landmark for the educational provision in India in 2009 and it is in action from April 2010.

- It has set the stage for providing free and compulsory education to all children in the age group of 6-14 years.
- It has made provision in its Norms and Standards for teaching art education to classes 6 to 8, by providing separate teacher for teaching arts.

Art education was given importance in all documents of India since independence at school level and teacher-education level, but never got the desired place and acceptance. Prior The Right of Children to Free and Compulsory Education Act, in 2005 the NCF reiterated the values enshrined in Constitution including reduction of curricular burden on children, ensuring quality education for all and systemic changes as markers of curricular reforms. It recognizes the primacy of children's experiences, their voices and their active involvement in the process of learning. Learning experiences at school should pave the way for construction of knowledge and fostering creativity and become a source of joy, not stress. Curricular transactions seek hands-on experiences and project based approaches. Based on the NCF 2005 a position paper was developed by the National Focus Group on Arts, Music, Dance and Theatre and Heritage Craft Traditions. These documents paved the way for better judgment of how art forms were to be implemented in the field of education.

### 3.1.2 XII Five Year Plan (Art and Culture) (2012-17)

#### (Ministry of Culture, Government of India, New Delhi)

The mandate of the Working Group on Art & Culture for the XII Plan is focused on review and evaluation of the existing schemes in the context of their effectiveness, utility, duplication, etc. and to identify gaps, bottlenecks and to come up with effective responses by way of new initiatives, innovative, fresh ideas/inputs, etc. Need for review of the status of various Institutions working in the Sector vis-à-vis the efficacy of their functioning in the contemporary period was also considered necessary. In addition, the need for suitable strategies for effective use of technologies for better preservation, conservation and access to heritage resources and up gradation of national institutions to greater level of excellence was also underlined.

Major Issues:

##### 1) Giving Culture Sector its Due Priority

For the developmental planning of the Culture sector, it is necessary to emphasize the need for sensitizing policy makers as well as those in positions to influence such policy making, both within and outside the Government, with the important role culture plays in the overall developmental process. Like Environment, it is necessary for providing the sustenance to the human existence and provides conditions for peaceful coexistence so necessary for economic growth. Further, it seems the Culture Sector has been wrongly classified / understood as non- productive and non-developmental sector. In spite of the fact that it provides employment to a large section of population and contributes significantly and spurs many other economic activities like tourism etc., it is surprising that this sector has not got the priority it deserves in the Nation's overall agenda for development.

##### 2) Cultural Development, Economic Development and Growth

Culture is both an instrument and means of economic growth as also a desirable environment which gives meaning to our existence. This dual role of culture applies not only in the context of the promotion of economic growth giving employment to a large section of society, but also in relation to other objectives, such as sustaining the physical environment, preserving family values, protecting civil institutions in a society, and so on. On the other hand development has to be seen in terms that include cultural growth, the fostering of respect for all cultures and for the principle of cultural freedom.

According to an estimate, in India, Agriculture employs 37-40% of the workforce; Culture and Creative Industries, 45-48%; all other industries together employ around 17-20%. Main challenge in the growth and promotion of cultural industries lies in developing a revenue-generating model which could be self- sustaining.

##### 3) Cultural Development Vis-à-vis State Governments' role

- For sustaining the much needed plan size for Art & Culture Sector, two major ways for incurring Plan Expenditure in GOI are through Central Sector Schemes and Centrally Sponsored Schemes. It is very unfortunate that it was the only Ministry that does not have any decent Centrally Sponsored Scheme which can give a little flexibility and involve States more closely. It is further added that the intention of the Government as a whole is to execute the schemes through State machinery, which is lacking in the schemes of Ministry of Culture..
- It was also felt that no comprehensive data is available about the cultural resources in the country which hampers scientific planning, not only in cultural field, but also in others like tourism etc. It was suggested that mapping of Indian Culture should also be got done through specialized agencies.
- It was also suggested that there is a need to connect Education with Culture with the idea that courses on theatre and performing arts be brought in at school/higher education level as there is a weak link between practice and theory. It was advocated for creation of an exclusive TV channel on culture which should be with the Ministry of Culture. Till such times it becomes a reality, scheme should be taken up to make and support programmers which may be telecast on TV on various public and private channels. It will generate interest in the young generation about our heritage. It was also stressed that art, theatre and music education should be upgraded by formulating some scheme.
- It was suggested by Secretary DONER that the Working Group should consider enhancing the existing 10% of the Plan allocation earmarked for cultural activities in North East to 25% in favor of NER. Since activities of Art & Culture are basically events based, there is enough fluidity in it to take up more cultural activities in North Eastern Region.

### 3.2 State Level

#### 3.2.1 Institution-wise and Scheme-wise Recommendations: (From XII year plan)

##### 3.2.1.1 Institutions in the field of Performing Arts

###### Sangeet Natak Akademi (SNA)

1. The proposals submitted by the Akademi may be included in Ministry's proposals for the 12th Plan.
2. For widening and up scaling its activities as proposed, the Akademi would need administrative strengthening and some re-organization of its existing structure. This will include:
  - (i) Setting up of Centre for tribal and folk arts
  - (ii) Setting up of a National Museum, Archives and Library of Performing Arts
  - (iii) Setting of an ICH Cell
  - (iv) Setting up of a Cell for the operationalization of NCPA at New Delhi.
3. While some overlap of the schemes may in fact be desirable, the Akademi will review its schemes to better align them with the extant schemes of the Ministry of Culture and the sister Akademies.

**National School of Drama (NSD)**

1. The proposals submitted by the NSD may be included in Ministry's proposals for the 12th Plan.
2. Re-developing the NSD Campus and strengthening of its academic faculty will constitute important priorities of the school over the 12th Plan period.
3. NSD may not be burdened with the task of running drama schools across the country. Ministry of Culture may operate an independent scheme for the setting up of State/ Regional/ National schools of drama and professional repertory companies in various parts of the country.
4. For professionalization of existing theatre groups across the country and generating employment for trained actors, directors and technicians, it is imperative that repertory companies with high standards of excellence are created across the country, with the support of Ministry of Culture. A National Theatre Council may be set up for operationalising the scheme.

**Indira Gandhi National Centre for the Arts (IGNCA)**

1. The proposals submitted by the IGNCA may be included in Ministry's proposals for the 12th Plan.
2. Construction of the Concert Hall, which is a part of the building plan of IGNCA, will be taken up during the 12th Plan to develop it as a world class venue for cultural performances. It will form a part of the overall plan for National Centre of Performing Arts at New Delhi, proposed as a new central scheme.
3. Dissemination of the valuable information collected by IGNCA may be an important area of its focus in the 12th Plan.

**National Mission on Manuscripts (NMM)**

1. In view of recommendations of the Study carried out by EdCIL, the Mission may be continued in the 12th Plan and related proposals included in Plan proposals of the Ministry.

**Centre for Cultural Resources & Training (CCRT)**

1. The proposals submitted by CCRT may be included in Ministry's proposals for the 12th Plan.
2. Before opening more regional centres, CCRT will fully operationalize its newly set up Centres at Hyderabad, Guwahati and Udaipur.
3. To extend its outreach, CCRT will collaborate with SPIC MACAY.
4. CCRT will work with MHRD and NCERT to augment cultural inputs in school curricula.

**Kalakshetra Foundation**

1. The proposals submitted by Kalakshetra Foundation may be included in Ministry's proposals for the 12th Plan.
2. Completion of Kootambalam works will be a priority for the first (and perhaps second) year of the Plan.

**3.2.1.2 Schemes of Government:****I. Scheme of financial assistance to professional groups and individuals engaged for specified performing arts projects (performing arts grant scheme)**

XII five year plan proposals

The Scheme is proposed to be continued in the XII Plan, with the following modifications:

1. The Scheme will be re-named as Performing Arts Grant Scheme (PAGS).
2. The Salary Grant component will be re-named as Repertory Grant.
3. Grant will be enhanced from Rs. 6,000/- per month to Rs. 10,000/- per month for the artistes and from Rs. 10,000/- per month to Rs. 20,000/- p.m. for the Gurus/Directors.
4. A new component of Guru Shishya Parampara Grant will be incorporated in the Scheme with a view to nurture the Guru Shishya tradition in the field of traditional performing arts. The Gurus would be recognized by Search-cum-Recognition Committee provided in the scheme and will be allowed sufficient flexibility in dealing with their Shishyas. Instead of landing them with a heavy paper work, the scheme seeks to trust the Gurus with the details of the training they will impart. To safeguard against any misuse, the grant has been subjected to an annual review by the Search-cum-Recognition Committee. A remuneration of Rs. 20,000/- p.m. for the Gurus and Rs. 40,000/- p.m. for Sr. Gurus/ Acharyas has been proposed to ensure that Gurus of high calibre participate in the Scheme. Rates of stipend for the Shishyas and other details have also been worked out in consultation with members of the Expert Committee constituted under the Scheme.
5. As all applications will be evaluated by the Expert Committee in Ministry of Culture, recommendations of the State Government or a cultural organization of Government of India will not be insisted upon.
6. While the ceiling of production grant will stay, for the present, at Rs. 5 lakhs for the professional groups, it will be restricted to Rs. 2 or 3 lakhs for the individual applicants.
7. Some other minor modifications will be made to simplify the procedure.

**II. Scheme of building grants, including studio theatres**

XII five year plan proposals

This is new version of old Building Grant Scheme and has been introduced only in January, 2011. The scheme will be continued in the 12th Plan without any changes, except that the quantum of assistance for projects in difficult areas like the North-East, J&K will be enhanced from 60% to 90% of the approved project cost. But, in view of the ceiling of assistance having been raised from Rs. 15 lakh to Rs. 50 lakh in the case of metros and Rs. 25 lakh in other places, a much higher allocation will be required for the scheme.

### **III. Scheme for Tagore cultural complexes (erstwhile multipurpose cultural complexes scheme) xii five year plan proposals**

As the old MPCC scheme has been thoroughly revamped and re-introduced in May, 2011 under the name of 'Scheme for Tagore Cultural Complexes', the scheme is proposed to be continued in the 12th Plan without any major modifications, except that the quantum of assistance for projects in difficult areas like the North-East, J&K will be enhanced from 60% to 90% of the approved project cost.

### **IV. Financial assistance for development of cultural organizations (cultural functions grant scheme)**

#### XII five year plan proposals

This new version of an old scheme of Research Support to Cultural Organizations, introduced in 2009-10, has been a resounding success. To make the scheme even more effective, it will be continued in the 12th Plan with following modifications:

1. As all the projects are evaluated by an Expert Committee in the Ministry of Culture, recommendations of the State Government or a cultural organization of Government of India will not be insisted upon.
2. The Scheme will cover even those projects that are aimed at showcasing Indian culture abroad. It will also include travel grant and other kinds of support for participation of eligible organizations or their members in festivals and program held outside the territory of India.
3. The maximum ceiling of assistance will be increased from Rs. 5 lakh to Rs. 15 lakh, subject of course to evaluation of each project by the Expert Committee.
4. Some other minor changes will be made to make the procedure even simpler.

### **V. Award of scholarship and fellowship to outstanding artistes in the field of performing, literary and plastic arts**

#### XII five year plan proposals

The Scheme of scholarships and Junior/Senior fellowships is proposed to be continued in the 12th Plan, with the following modifications:

1. From 1st year of the plan, the number of awards will be increased from 400 to 500 in all the three categories i.e. scholarships, junior fellowships and senior fellowships.
2. In 3rd year of the plan, the value of awards will be reviewed for suitable enhancement.

### **VI. Tagore national fellowship for cultural research (earlier called 'flexible engagement of scholars')**

#### XII five year plan proposals

The Scheme has been introduced in 2009-10 and proposed to be continued in the 12th Plan. As there is an inbuilt provision of bringing more and more institutions under its coverage, the scheme will see a constant expansion during the 12th Plan.

### **VII. Assistance to cultural organizations in India (SPIC MACAY and others)**

#### XII five year plan proposals

1. The Scheme is proposed to be continued in the 12th Plan and apart from those being already benefitted under this scheme, more organizations will be covered.
2. SPIC MACAY will be encouraged to extend its reach even further and cover a much larger number of schools, colleges and other educational institutions, for which Ministry of Culture will also enhance its support to Rs. 5.00 crore in the first year and further increase it from year to year.
3. NCPA, Mumbai, who for the first time were provided some initial funding in the last 2 years of 11th Plan, will be supported over the 12th Plan, to enable it to take up the much-needed basic infrastructural modernization of its facilities.

### **VIII. Safeguarding and other protective measures in the area of intangible heritage and cultural diversity (arising out of UNESCO convention)**

#### XII five year plan proposals

The Scheme is proposed to be continued in the 12th Plan, with the following modifications:

1. The Scheme will be implemented through a nodal agency with funds being transferred to that organization from year to year.
2. The earlier scheme for masterpieces of intangible heritage of humanity will be merged with this scheme and it will be extended to cover items that have already been inscribed or will be inscribed on the Representative List and other Lists under the ICH Convention.
3. Preparation of nominations dossiers and candidature files for various lists of ICH will be included in the scope of the scheme.

### **IX. Scheme of financial assistance to artistes in indigent circumstances**

#### XII five year plan proposals

The Scheme will be continued in the 12th Plan, with the following modifications:

1. The Scheme will be decentralized and operated by the ZCCs.
2. Amount of monthly honorarium will be enhanced from Rs. 4000/- per month to Rs. 5000/- per month.
3. The State-Central quota will be abolished and existing beneficiaries under that quota will be covered under the Central quota.

**X. National artistes' welfare fund**

XII five year plan proposals

The Scheme could not be implemented in the 11th Plan and implemented in the 12th Plan.

**3.2.1.3 New Schemes of Government:****I. Setting up of National Centre of Performing Arts at New Delhi**

Unlike most capital towns of the world, Delhi does not have a world class integrated infrastructural facility for hosting cultural shows of performing arts. The existing facilities are isolated, inadequate and do not meet the professional requirements for presenting large, state-of-the-art productions.

**II. Setting up of National Archives for Cultural Audio-Visual Materials Background**

A large amount of cultural wealth created in the last 50 years or so is stored in the form of audio-visual materials available with various government and non-governmental institutions and private individuals. In the absence of systematic organization and periodic up gradation, these materials are fast deteriorating. To digitize them and to provide the wider public an easy access to these and to the new audio-visual resources being constantly generated, appropriate technological and institutional framework is urgently required.

**III. Setting up of National Schools of Drama**

11th Plan included a proposal for 5 Regional Schools of Drama to be set up by National School of Drama (NSD), New Delhi - one each in Bengaluru, Kolkata, Maharashtra/Goa, J&K and the North-East region. While NSD has been reluctant to set up these schools as autonomous centres under the umbrella of NSD, the Kannada theatre, Bangla theatre and other language theatres have been wary of being called the regional or satellite centres of the National School and the NSD model being imposed on them. In the circumstances, none of the proposed regional schools could be set up, except the one at Bengaluru which also is not progressing beyond its stage of infancy. The NSD at New Delhi cannot do full justice with the language theatre and there is a case for having, in the long run, a chain of NSDs catering to each of the languages listed in 8th Schedule to the Constitution.

**IV. Support to State Akademies**

India's traditional and contemporary cultural expressions are so diverse and spread out that no centralized academy or agency can do full justice with the demands of the sector. For various reasons, many of the State Akademies set up by various State Governments are in disarray. Central Government needs to partner with the State Governments in making the State Akademies play an important role in preserving and promoting performing, visual and literary arts of each State.

**V. TV Programming on Art and Culture**

A TV production unit may be set up under the Ministry of Culture. It will be a professionally managed SPV that will draw upon the resources of different institutions and best talent in the field. It will produce imaginative programs on different aspects of art and culture for being telecast on the existing or a new TV Channel. Apart from DD Bharti and other government channels, the programmes prepared by this Production Unit may be shown on all other channels including private Indian and international channels like National Geographic, Discovery and other channels dedicated to Art and Culture.

**VI. Indian Literature Abroad**

Indian writing is unique in its plural, multilingual traditions and has an incredible heritage of rich literary diversity. While Indian literature in English is read and appreciated internationally, the vital literary voices in the rooted Indian languages are not accessible to the rest of the world due to a lack of quality translations and sustainable promotion. There is a pressing need to project Indian intellectual and literary sensitivities to the world, manifest in the body of its multilingual literature. Arising from Mid-Term Appraisal of 11th Plan, Ministry of Culture has initiated a pilot project to promote and showcase Indian literature in the various Indian languages to a larger international audience. To take the project forward, a distinguished advisory committee and a project office have been set up by the Ministry of Culture. Though some beginnings have already been made, it has been felt that the project will not fructify unless it is provided with an institutional framework.

**VII. Centre of Excellence Scheme**

To carry out its mandate, Ministry of Culture has, on the one hand, autonomous organizations that are fully funded by the Government and implement approved programs and schemes. It has, on the other hand, grants-in-aid schemes like the Scheme of Salary and Production Grant, wherein some financial assistance is given to non-government culture organizations to support whatever programs and activities they decide to undertake. Between these two extremes of full funding coupled with administrative control and adhoc funding with no administrative control, there is no scheme that would enable the Ministry to develop centres of excellence outside government and leverage professional expertise and capacities available with these organizations in specific disciplines.

### VIII. Setting up of International Cultural Centres at Kolkata and Chennai

There is a Rabindra Sadan Cultural Complex at Kolkata (with many cultural institutions in and around it) which has the potential of being developed into an integrated mega cultural complex of international standards. Government of West Bengal has set up a Vision Committee which is working out the project details. Indicating that the project will cost about Rs. 1000 crore, Government of West Bengal has sought central assistance for the project, proposed to be named as Tagore International Cultural Centre. While the project can be appraised only after the details have become available, it will be desirable to make a provision for this in the 12th Plan.

### IX. Scheme for Sustaining the Living and Diverse Cultural Traditions of India

To provide sustenance to and showcase the richness of living and diverse cultural traditions of India, a Coordination Committee has been set up under the chairmanship of Principal Secretary to PM. As a first step, the Committee has set up a Group under the convener ship of Secretary (Culture) to suggest an overarching mechanism for mapping and documentation of India's valuable traditions in different eco-cultural zones. The Group is working on the subject will be making its recommendations in due course, whereupon the Coordination Committee will be expected to set up an inter-ministerial mechanism for a coordinated identification, documentation and preservation of the extensive and diverse range of India's traditional knowledge system and integrating its various dimensions.

### X. Scheme of Financial Assistance for Publication of Magazines and Journals dedicated to Indian Culture and Heritage

In November, 2011, Ministry of Culture has launched a scheme titled "Scheme of Financial Assistance for Publication of Magazines and Journals dedicated to Indian Culture and Heritage". Under the Scheme Ministry will give financial support of upto Rs. 10.00 lakh a year, and in exceptional cases, upto Rs. 20 lakh, to magazines and journals dedicated to India's culture and heritage.

### XI. MIS and automation of Grants-in-aid schemes

Ministry of Culture and its autonomous organizations have a large number of schemes where financial support is provided to individuals / organizations / NGOs, in the cultural arena. A number of steps have already been taken to bring about transparency, to the extent possible, in handling these schemes. These include electronic payments, putting up of minutes of the expert committee meetings on the website, holding of frequent meetings, permitting applicants to apply throughout the year, appointment of an outsource agency in an effort to streamline the system and so on. Further, since all decisions of financial support are taken only on basis of recommendation of Committees of reputed experts, there have by and large not been any major problems or complaints.

## IV. CASE STUDIES: PERFORMING ART SPACES

### 4.1 Case Study in Indian Context:

#### 4.1.1 Shri Ram Centre For Performing Arts, Delhi

**Introduction:** Shri Ram Centre was founded in 1975 by Mrs. Panna Bharat Ram. Since 1976, the Centre has been operating from the Indian National Theatre Trust premises in the heart of Delhi's theatre district in the Mandi House area. It's the most active place in Delhi for theatre since seventies.

**Concept:** the concept was to design a building using pure geometrical forms such as cuboids and cylinders by use of materials such as concrete, brick work and stone to give it a raw look similar to sculpture.

**Theme:** Brutalism: A style of functionalist architecture, prevalent in the 1950s and 1960s. It is characterised by the use of steel and exposed concrete in massive blocks.

**Types of events that takes place:** Musical performances, Dance performances, Theatre performances and sometimes Exhibitions.



FIGURE 2: Shri Ram Centre

of five years. The time series monthly data is collected on stock prices for sample firms and relative macroeconomic variables for the period of 5 years. The data collection period is ranging from January 2010 to Dec 2014. Monthly prices of KSE -100 Index is taken from yahoo finance.

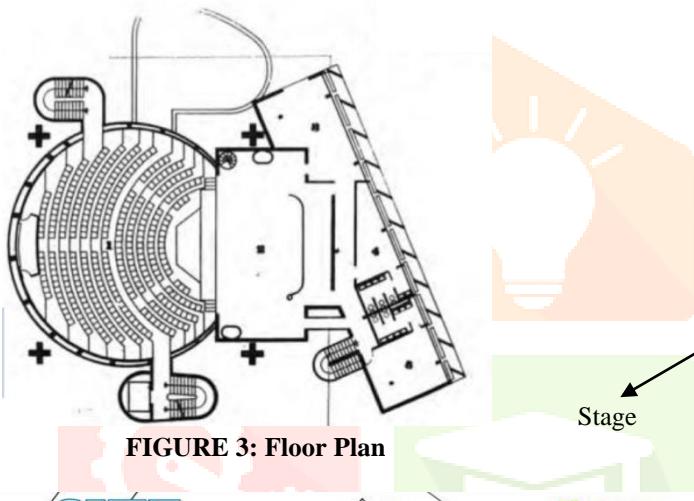


FIGURE 3: Floor Plan

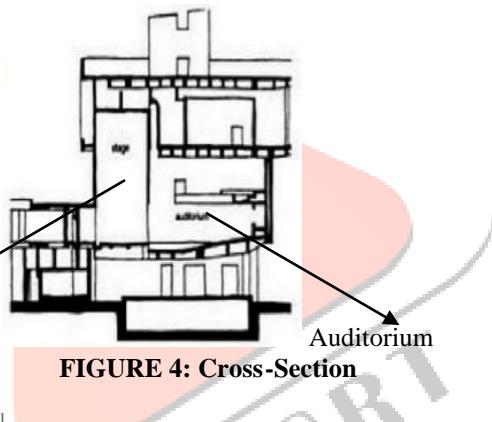


FIGURE 4: Cross-Section



FIGURE 5: Site Plan

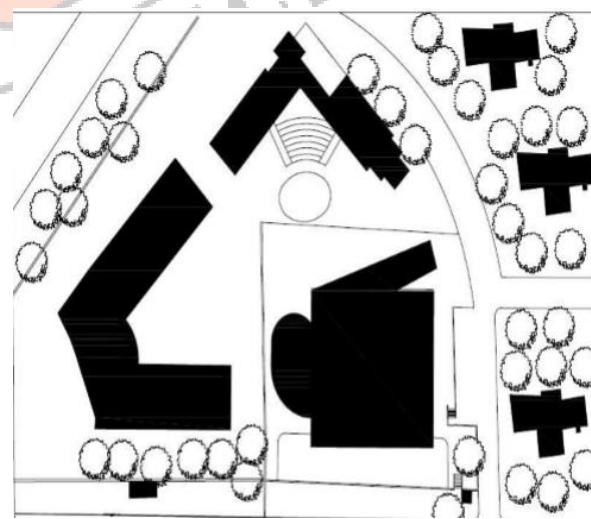


FIGURE 6: Built vs Open Ratio

The site is located in highly dense colony where the movement of traffic is major. The complex form of itself divided into levels in terms of height and also doesn't match another fabric of building structure. Parking space provided for the auditorium is not according to the norms provided. Parking conditions are not suitable for the person having physical disability. Parking space provided for the auditorium is 13m x 25m. (With one way aisle of 3m).

**Auditorium:** The auditorium, which boasts of a proscenium stage, has a seating capacity of about 556 people at two levels. The main hall seats around 403 and the balcony seats around 153 people. Total no of seats in our Auditorium are 375 out of which 75 are in the balcony and 300 in the Stall. There are two cylindrical blocks (canteen and some offices) placed on the left side rising up to a lower ht than auditorium. The celebrated concrete box is oddly appropriate for the site, a triangular slice of land abutting

the Mandi House Chowk. Green rooms are in a separate block placed to the backside of the main building connected to stage via staircase.

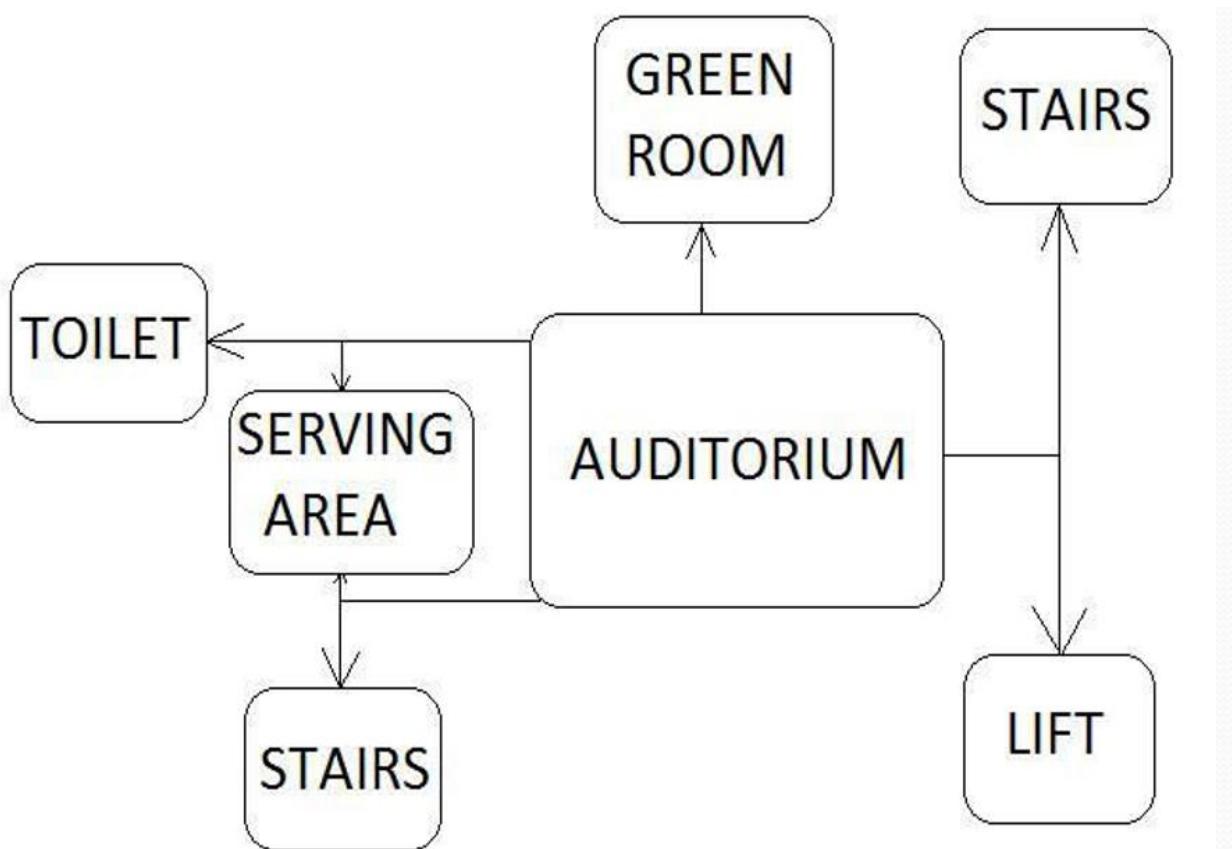


FIGURE 7: Auditorium Connectivity Chart

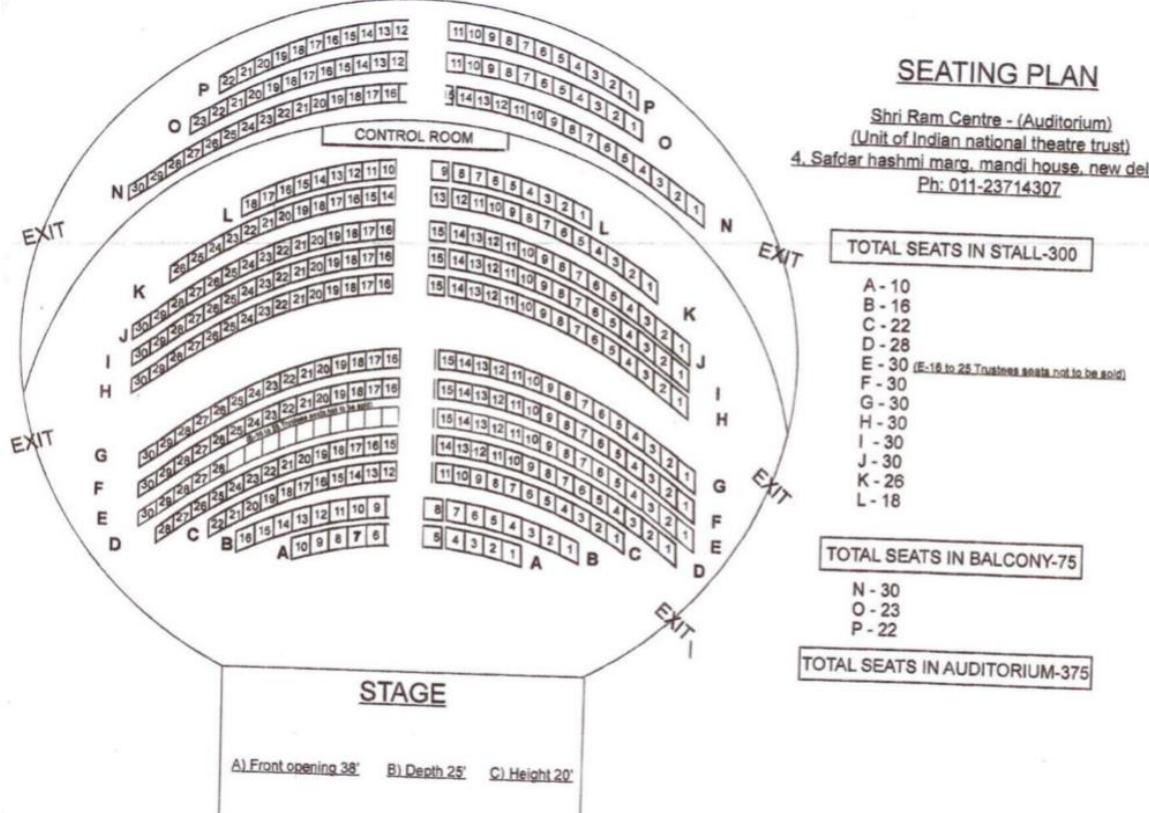


FIGURE 8: Auditorium Seating Plan



FIGURE 9: Auditorium and Stage

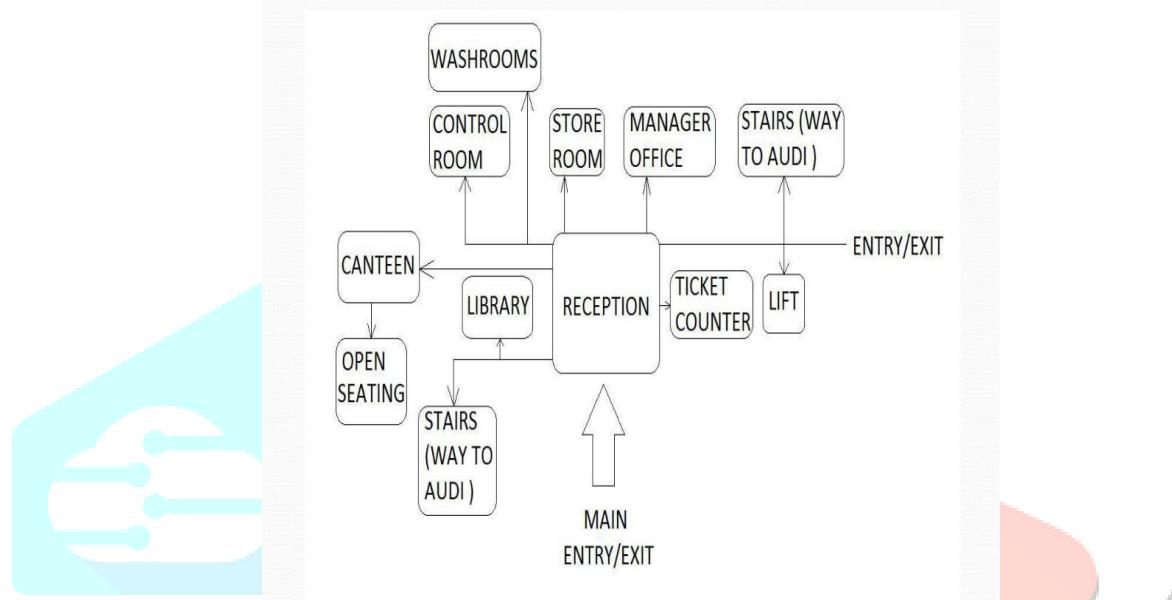


FIGURE 10: Ground Floor Connectivity Flow Chart



FIGURE11: Décor: Exposed concrete



FIGURE 12: Reception Hall: can also be used as an Exhibition Area

Cantilevered upper level allows the close interaction between the audience and the stage. The green room is situated in the different block on the back side of the main building and is connected to the stage through staircase.

Services (Fire Safety): In the level of fire detection services the centre installed the smoke detectors on the false ceiling of back seating. The accessories of the fire detection are installed main lobby, auditorium, green room, service areas etc. The building is also installed fire escape doors to avoid the discrepancy in the fire accidents. Emergency fire alarm also installed there.





FIGURE 13: Fire safety Device



FIGURE 14: A.C. Ducts

Walls: Mainly walls are made up R.C.C. The finishing is done with wood board which is a sound absorbing panel. Glass wool is filled in between R.C.C. and wood panels.

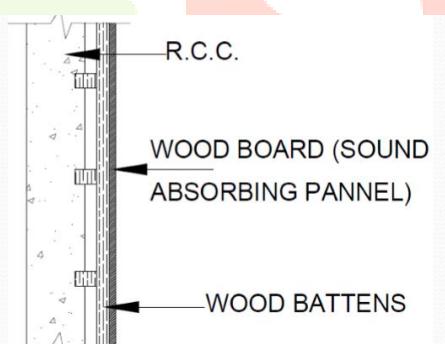
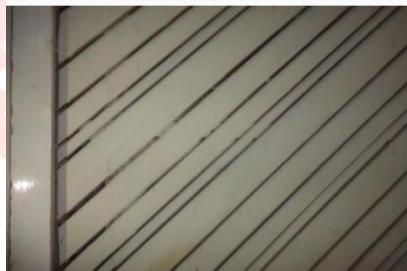


FIGURE 15: Wall type in Shri Ram Centre

Ceiling: R.C.C. coffered ceiling which distribute the load.



FIGURE 16: Coffered Ceiling

#### 4.1.2 Triveni Kala Sangam, Delhi

Introduction: The Triveni kala sangam was founded in 1952 as an academy of dance, music and painting. The centre is situated on a small plot of about one acre at tansen marg near Mandi House round about. The other institutes that surround it are the sangeet bharati, sri ram center, rabindra bhawan, sapru house and the sri ram bharatiya kala Kendra.

It was started in one room by Sundari K. Shridharani above a Coffee House in Connaught Place, Delhi, with two students under noted artist K.S. Kulkarni. Pandit Nehru took notice of her efforts and appreciated her work and allotted the land for the institution. The centre was built by the US architect Joseph Allen Stein in March 03, 1963. The idea was to form a complex which has non-commercial approach to art.

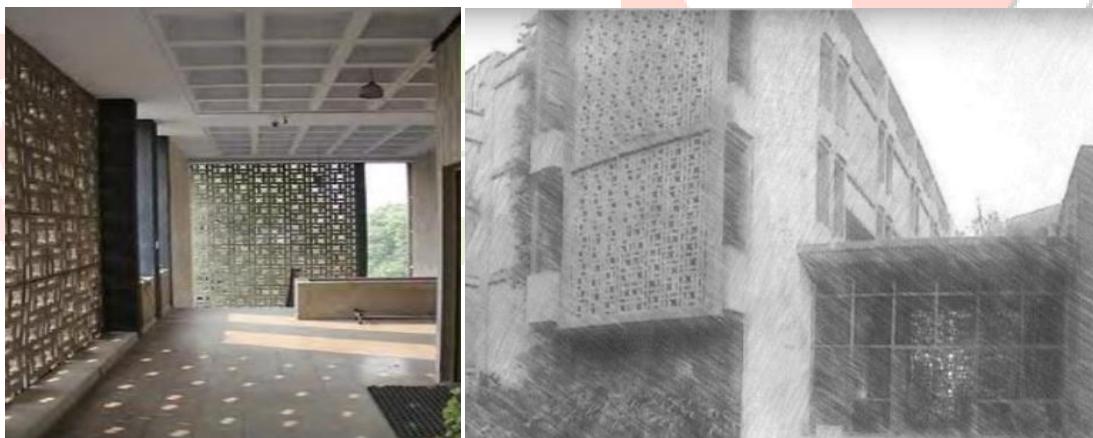


**FIGURE 17: Site Plan of Triveni Kala Sangam**

Types of events that take place:

Art Exhibition, Music, Dance and Photography classes and workshops, Music and Dance Performances

Concept: Flexibility in Spaces for performance of different art forms as large number of events had to be organised in a small plot and harmony between the interior and exteriors. Use of jail panels on the exterior wall to cope with Delhi's hot weather.



**FIGURE 18: Jail panels on the Exterior wall**

Theme: Synchronization between outdoors and indoors. The internal spaces seem to blend in with the outdoor space and form a perfect harmony.

Décor: The art centre has been given raw look through rough-cut shape along with concrete blocks with plastered finish which goes along well with the open spaces.

Colour Scheme: The neutral colour palette is used.

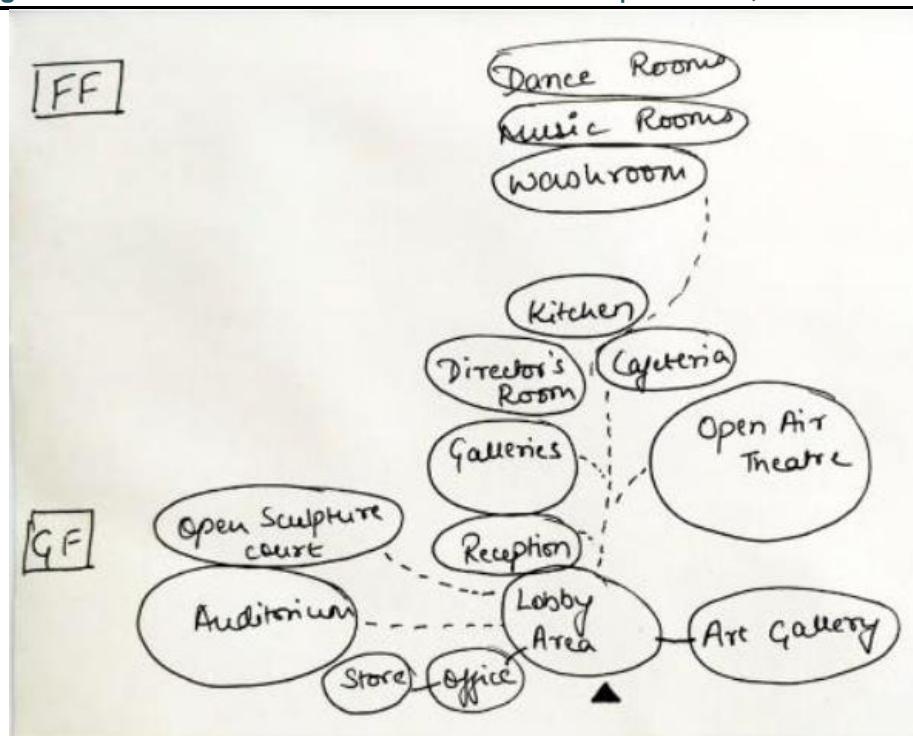


FIGURE 19: Floor Connectivity Flow Chart

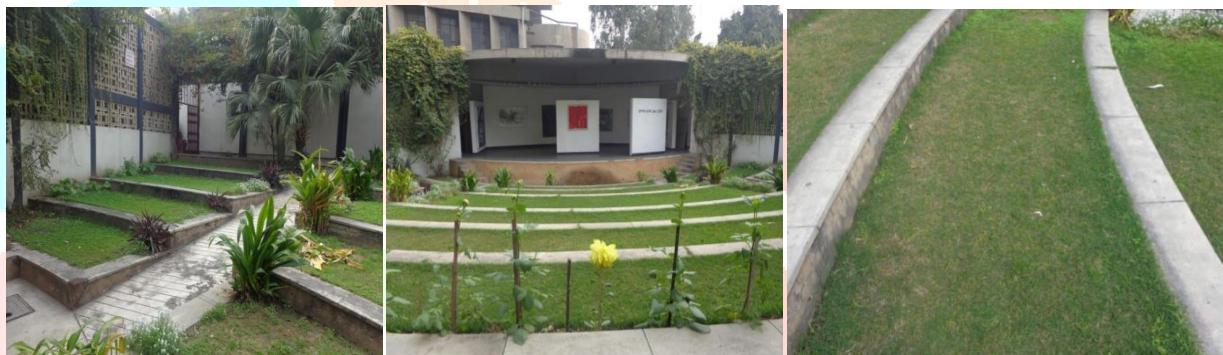


FIGURE 20: Multiple Open Green Spaces



FIGURE 21: Semi Open Air Gallery

Walls at Triveni Theatre: walls are mainly made up from R.C.C. with finishing of wood boards. Filling of glass wool is done between R.C.C and wood panels.

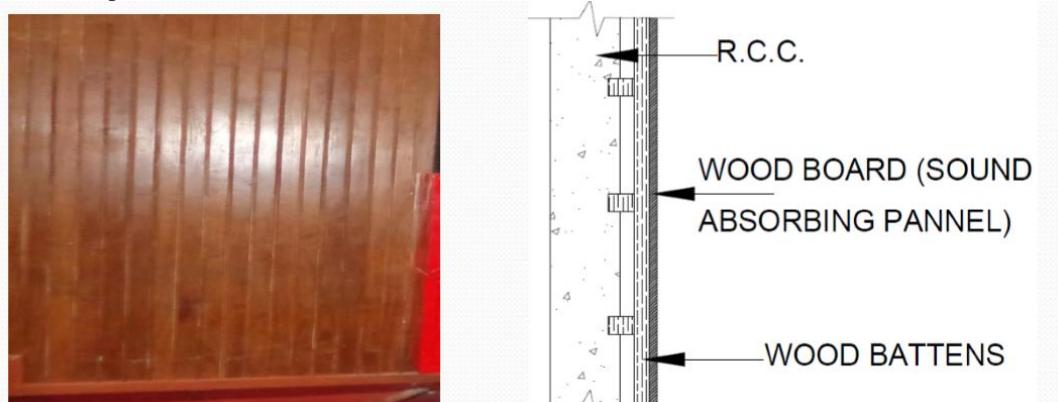


FIGURE 22: Walls at Triveni Theatre

Floor at Triveni Theatre: Timber flooring with carpet finishing. The flooring is shallow to run the services.



**FIGURE 23: Floor at Triveni Theatre**

Stage at Triveni Theatre: R.C.C. slab is laid along with the timber members for supporting the structure. Stage is finished with the wooden panels on the top.



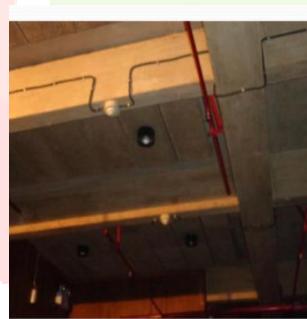
**FIGURE 24: Stage at Triveni Theatre**

Doors at Triveni Theatre: Sound absorbing wooden panels are used for the doors as well. In between two wood boards there is a layer of glass wool which is supported by wooden members.

Ceiling at Triveni Theatre: R.C.C. structure and the ceiling type is coffered ceiling.



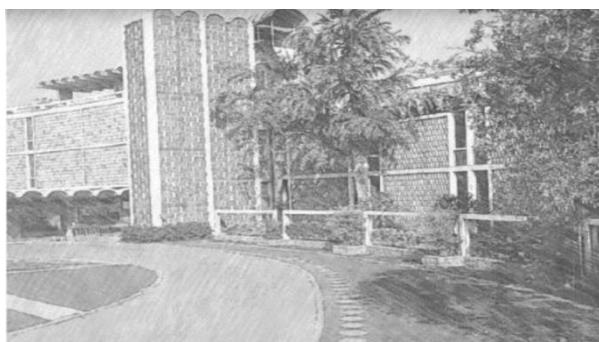
**FIGURE 25: Doors at Triveni Theatre.**



**FIGURE 26: Coffered Ceiling at Triveni Theatre**

#### 4.1.3 Indian International Centre

Introduction: In 1958, Dr. S. Radhakrishnan, then Vice President of India, and John D. Rockefeller III discussed setting up a centre for the quickening and deepening of true and thoughtful understanding between peoples of nation's. Mr. Rockefeller suggested an International House on the model of Tokyo's International House of Japan. The land of 4.76 acres was selected adjacent to Lodi Gardens, on which the present complex stands. Later as the activities of the Centre expanded, an Annex was added to the main complex in December 1996.



**FIGURE 27: Facade of Indian International Centre**

Concept: The design concept is simplicity and relationships. IIC has been designed with the idea of forming simple and minimalistic spaces rather than luxurious and lavish. There is a close relationship between the garden, water bodies, exteriors and interiors.

Types of events: Seminars, Symposia, Meetings, Dance Recitals Film Screenings and Drama

Plan: The centre is composed of Stein's individually articulated blocks with 46 guest rooms, lounge and dining room in one. Programmed blocks of library and offices, domed auditorium are all grouped around two great courts

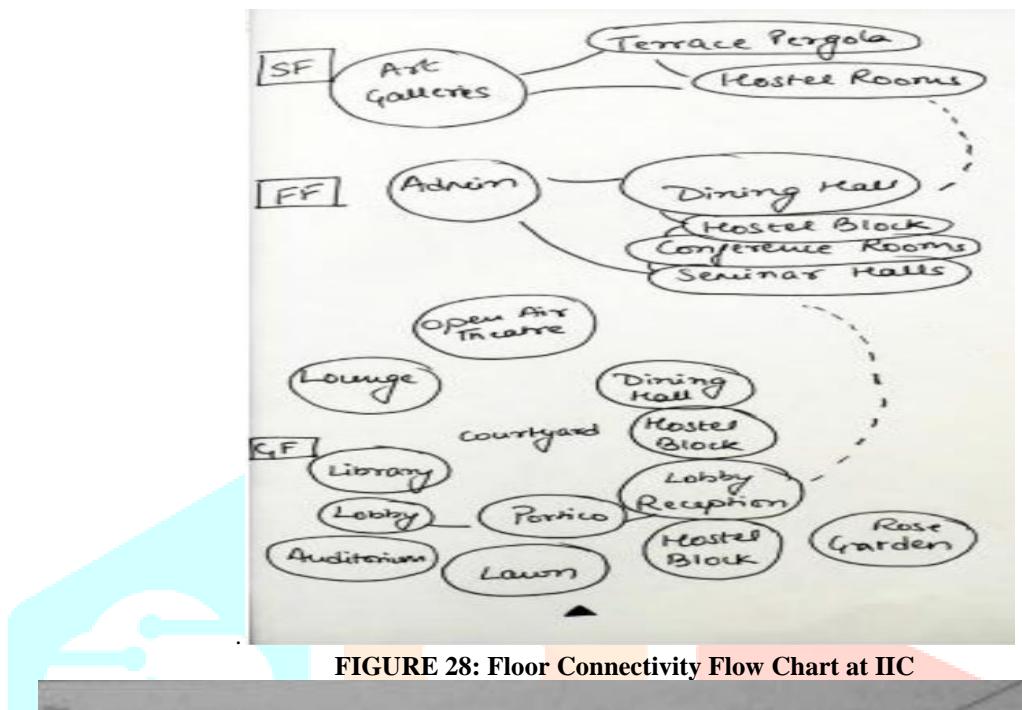


FIGURE 28: Floor Connectivity Flow Chart at IIC

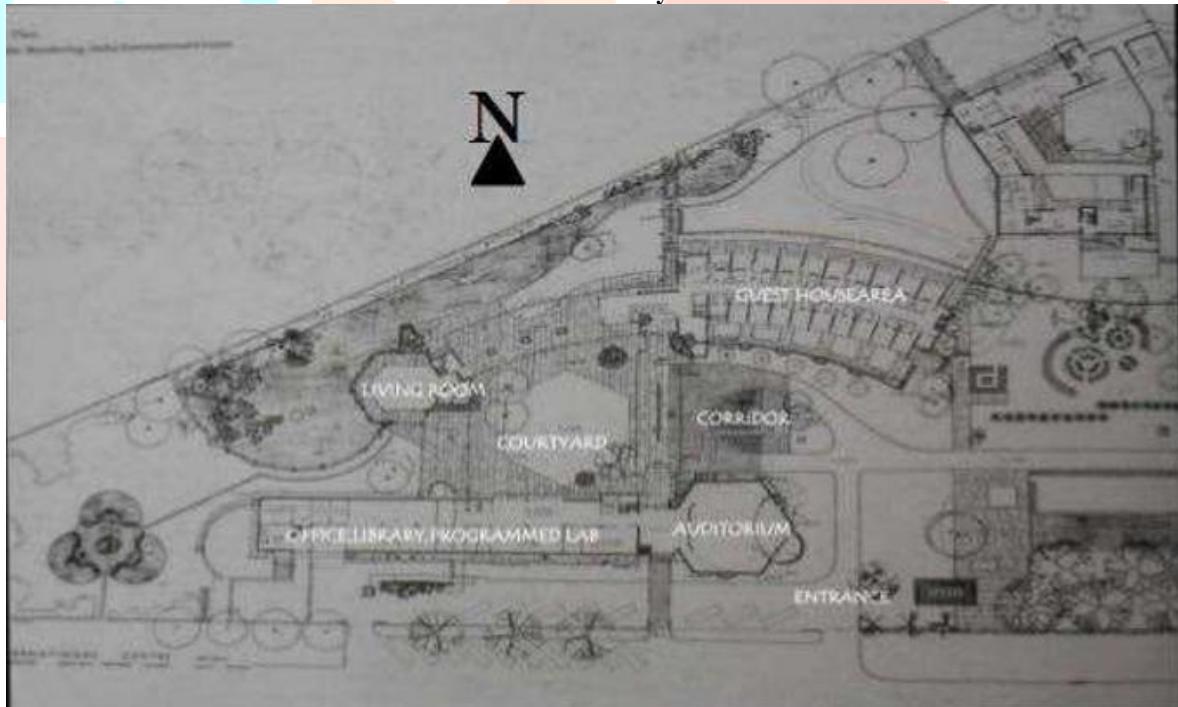


FIGURE 29: Site Plan of Indian International Centre



**FIGURE 30: Functionality of Space**

#### Courtyards and Gardens at IIC:

- Plants in courtyard
- Paving pattern
- Fountain sculptures
- Exposed brickwork
- Precast concrete panels
- Window and shading devices of diff sizes
- The surfaces and materials Stein used: local stone, cast concrete jalis, blue and green ceramic tiles as highlights, were an updating of the Sultanate architecture of Delhi, which Stein had learned to love and admire through weekly exploration.



**FIGURE 31: Courtyards and gardens at IIC**

#### 4.1.4 Indian Habitat Centre, New Delhi

Introduction: Started in 1993 when HUDCO (Housing and Urban Development Corporation Limited) wanted an office building for its workers and decided to invite chosen non-profit organisation in the similar field to share the workspace. Designed by architect Joseph Allen Stein, Idea was to design a centre with shared services such as libraries for all the office members.

Concept: the concept was to design a cultural centre with proper air flow through all areas (indoors as well as outdoors) by use of traditional building materials and techniques.

Types of events that take place: Art Exhibitions, Conferences, Seminars, Music Theatre, Dance performances.

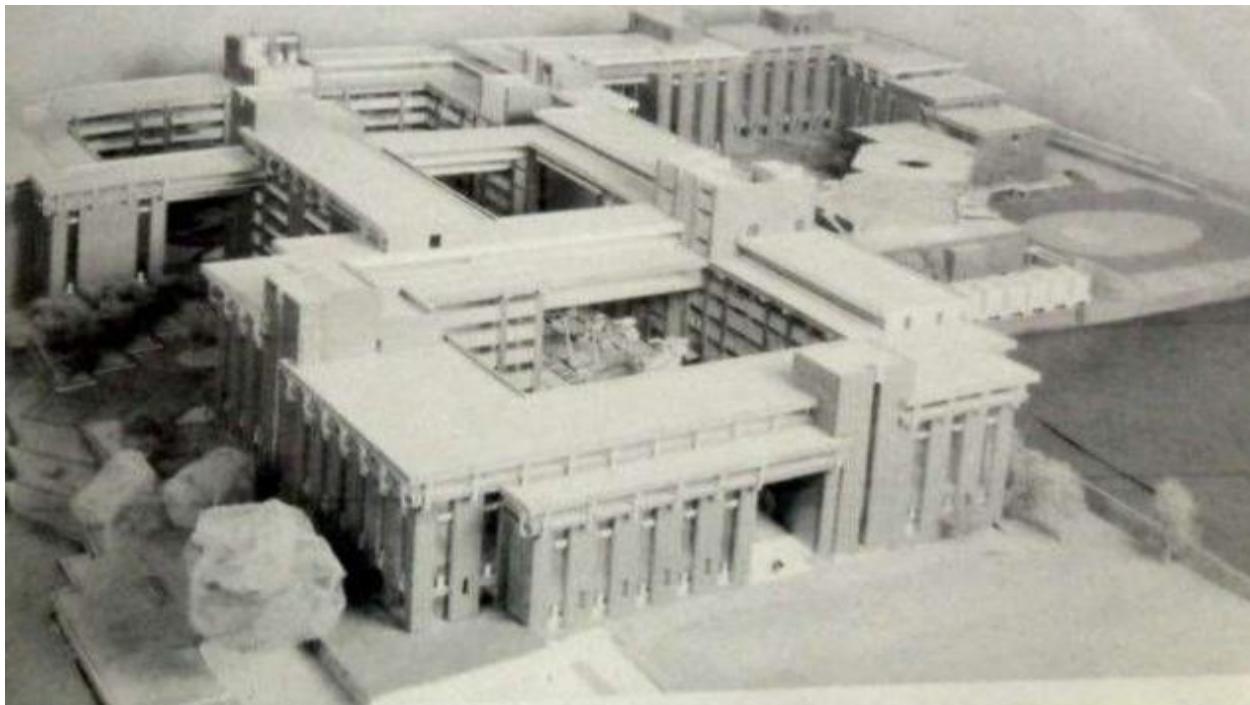
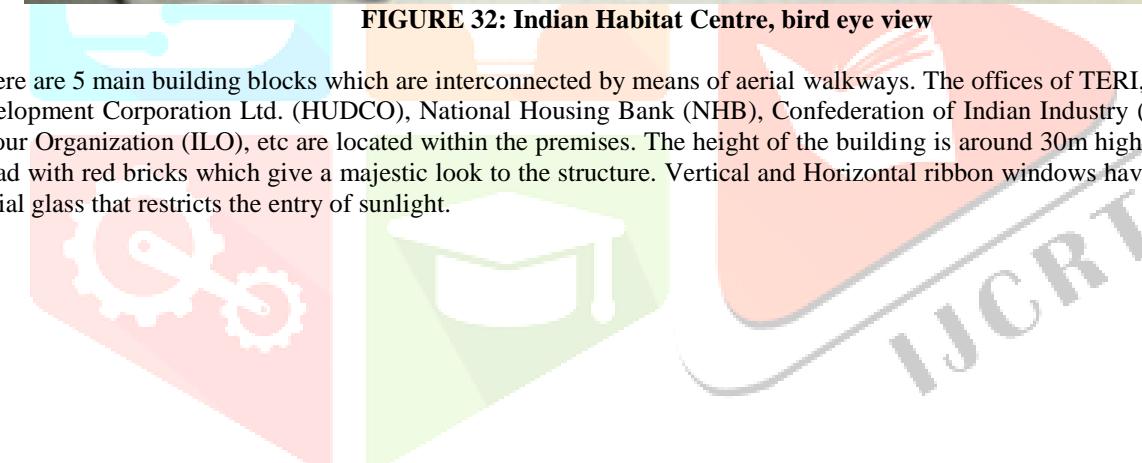


FIGURE 32: Indian Habitat Centre, bird eye view

There are 5 main building blocks which are interconnected by means of aerial walkways. The offices of TERI, Housing & Urban Development Corporation Ltd. (HUDCO), National Housing Bank (NHB), Confederation of Indian Industry (CII), International Labour Organization (ILO), etc are located within the premises. The height of the building is around 30m high. The entire facade is clad with red bricks which give a majestic look to the structure. Vertical and Horizontal ribbon windows have been used with a special glass that restricts the entry of sunlight.



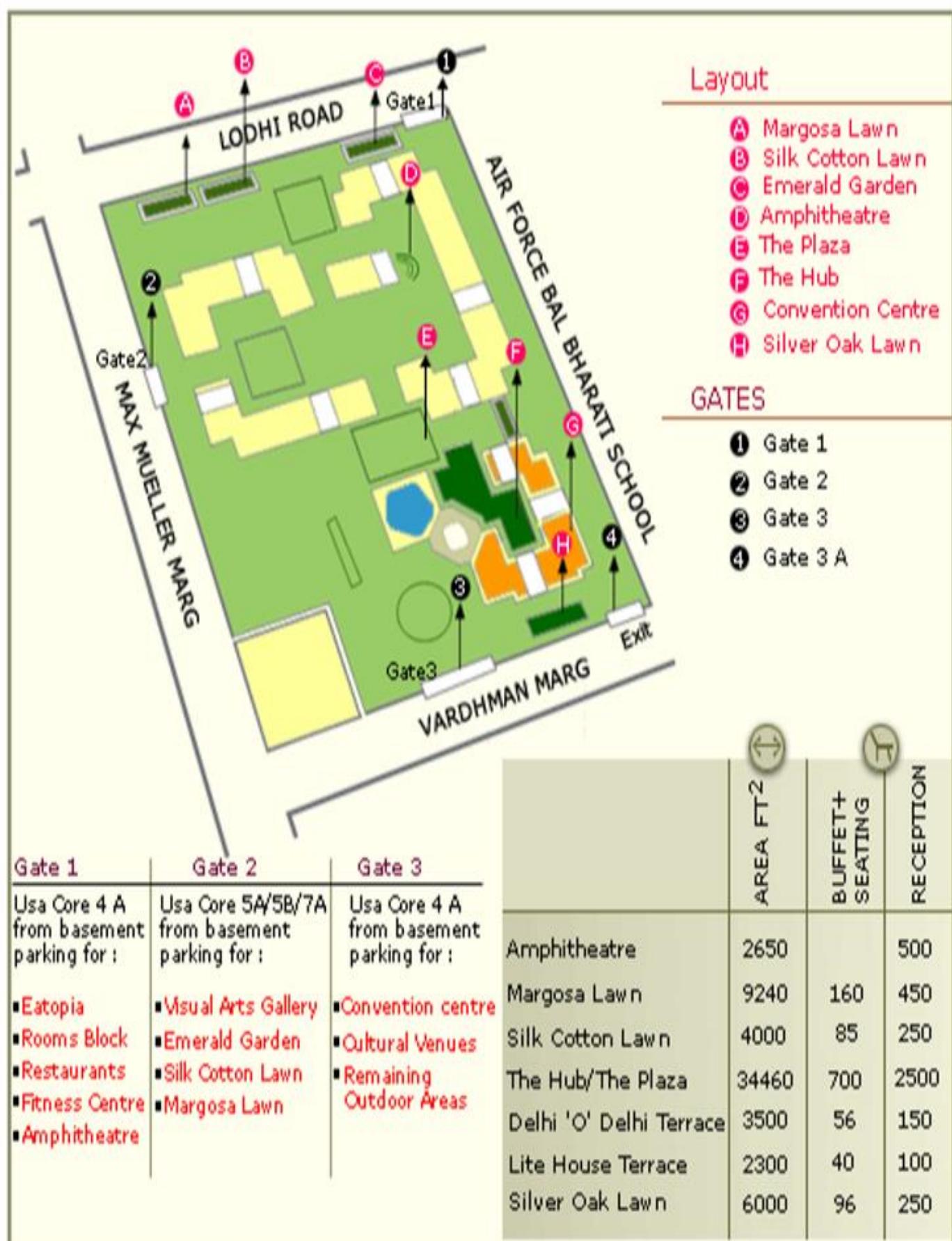
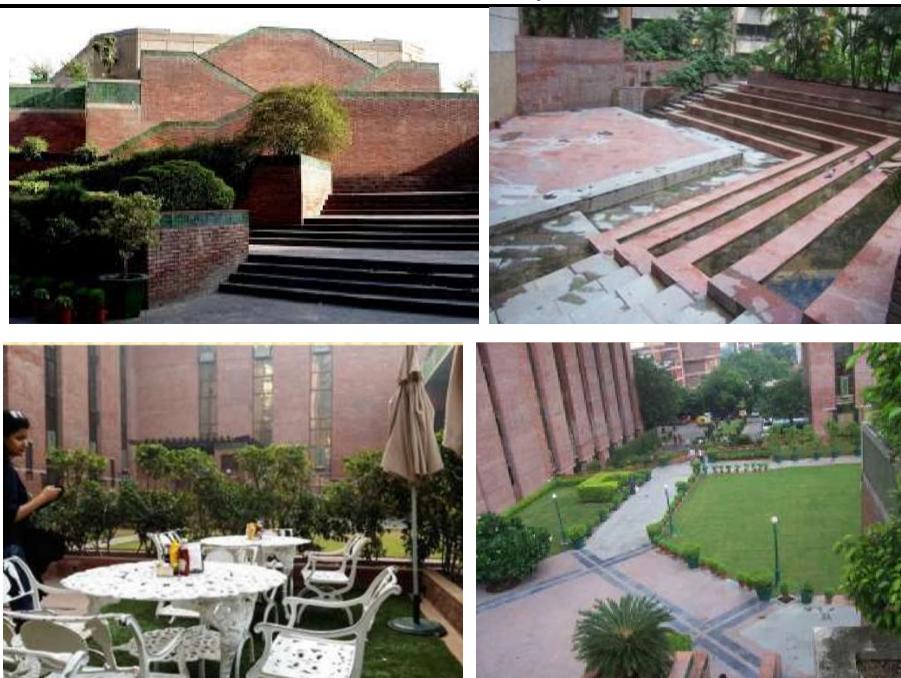


FIGURE 33: Site Layout plan



**FIGURE 34: Open Spaces at Indian Habitat Centre**

Open Spaces:

- Plaza
- Amphitheatre
- Open seminar space
- Open air diner

Courtyards: Building are grouped around climate temperate courts shade by overhead sun screens and enlivened by vertical gardens.



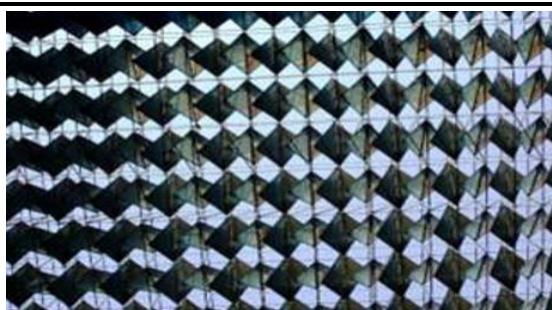
**FIGURE 35: Courtyard at Indian Habitat Centre**

Shading Device: The reflectors are installed above the building to provide shade and prevent sun from entering into the building. The reflectors are aligned at an angle which reflect back 70% of the sunlight and change their angle during winter to allow sunlight to fall on the windows.

User Experience:

- Wonderful construction with garden courtyard! It's so spacious and leaving Way for free air, sunlight and green space.
- Always love to visit the IHC for its cool and comforting atmosphere. What a wonderful architecture. I also enjoy eating at the two food courts here.

The grandeur, cool and comfortable atmosphere and the liveliness of the campus is the main achievement of this great Architect.



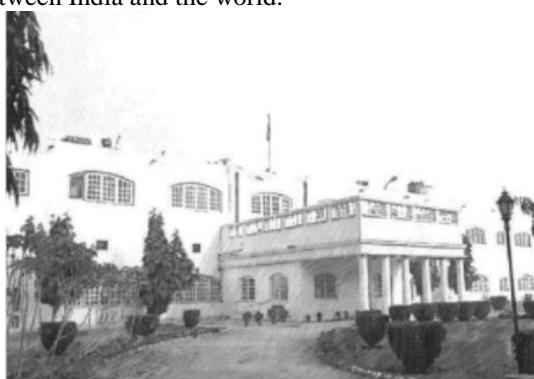
**FIGURE 36: Shading Device at Indian Habitat Centre**



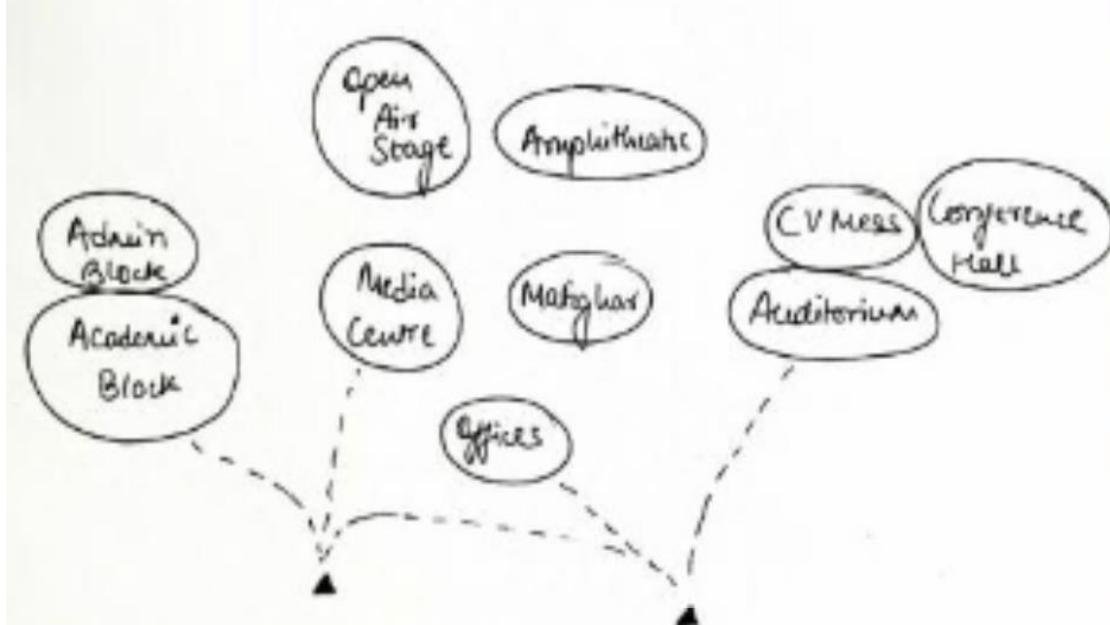
**FIGURE 37: User Experience at Indian Habitat Centre**

#### 4.1.5 Indira Gandhi National Centre for Arts, New Delhi

Introduction: Established in 1987 under the ministry of culture and launched by Prime Minister Shri Rajiv Gandhi in memory of Indira Gandhi. Fundamental approach of the centre is that its entire works should be multidisciplinary as well as interdisciplinary. The centre was formed in order to preserve folk art forms and promote awareness and sensitivity to historical and cultural linkages between India and the world.



**FIGURE 38: Indira Gandhi National Centre for Arts**

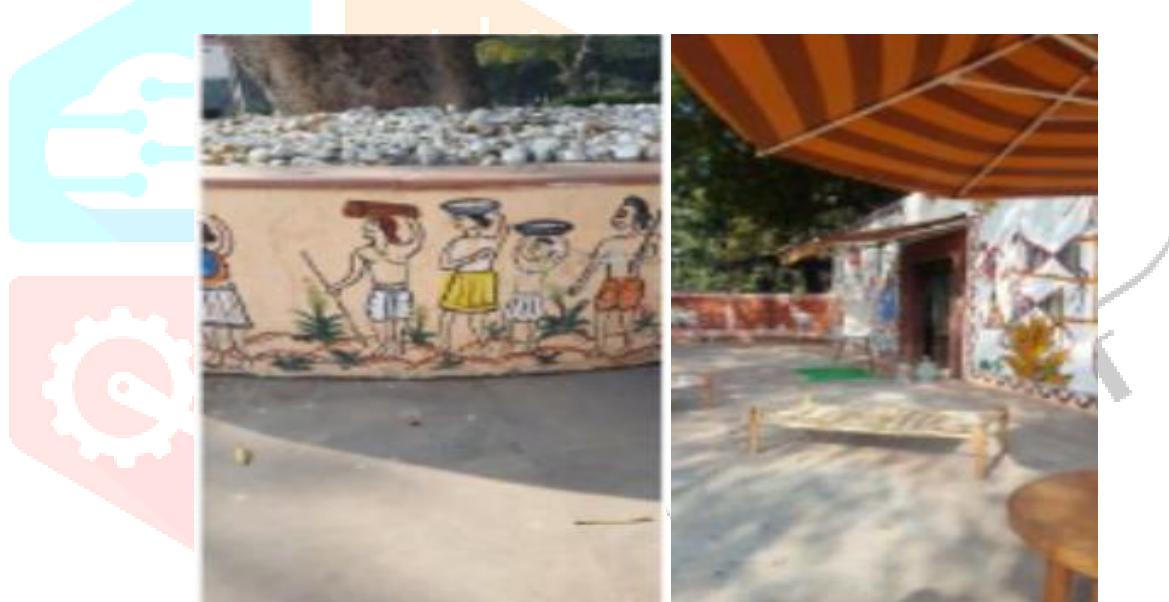


**FIGURE 39: Floor connectivity Flow Chart of IGNCA**

Concept: The concept behind designing IGNCA was to bring together the five elements- fire, water, air, earth and sky.

Types of events that take place: Seminars, Conferences, Exhibitions, Performances and lectures.

Theme: Indian art and craft



**FIGURE 40: Indian Art and Craft Theme at IGNCA**

Décor: The spaces in the centre have vibrancy by use by display of traditional Indian arts.



**FIGURE 41: Indian traditional arts style décor at IGNCA**

Colour Scheme: Indian traditional colours like orange, red and green.



**FIGURE 42: Colour scheme of IGNCA**

#### 4.1.6 National Centre for Performing Arts, Mumbai

**Introduction:** Located in NCPA mar, Nariman Point, Mumbai, Maharashtra. The NCPA was set up in 1969 as a national centre to preserve and promote traditional and contemporary performing and visual arts. It was co-founded by JRD Tata and Dr. Jamshed Bhabha. It is the first multi-venue, multi-purpose cultural centre to be built in South Asia. Overlooking the sea at the prime Nariman Point, it is built on land reclaimed by the sea and spans over 32,000 sq. M.

**Concept:** The concept was to design a multi-venue, multi-purpose centre with the contemporary look which reflects its aim to provide a platform for display of contemporary art forms.



**FIGURE 43: NCPA Site Location**

#### Areas on the site

- TATA THEATER
- JHAMSHED BHABHA THEATER
- MAIN ADMINISTRATIVE OFFICE
- TEACHING AND REASERCH BLOCK
- EXPERIMENTAL THEATER
- GODREJ DANCE ACEDEMY THEATER
- BLACK BOX
- ART GALLERY
- STAFF AND GUEST ROOMS AND N.C.P.A APARTMENTS
- CAFÉ
- LIBRARY
- GREEN ROOM
- KICHTEN • RECEPTION
- OPEN AIR THEATER



FIGURE 44: Site Layout Plan of NCPA

Tata Theatre:



FIGURE 45: Tata Theatre at NCPA

- DESIGNED BY PHILLIP JHONSON & ACOUSTICIAN CYRIL HARRIS
- OPENED IN 1982
- SEATING CAPACITY 1010 PERSONS
- FOYER CAPACITY 500 – 600 PERSONS
- SIX ENTRY SEATINGS
- FOR MUSIC CONCERT, DANCE AND DRAMA
- ROTATING STAGE
- 6 GREEN ROOMS WITH ATTACHED TOILET
- SEA VIEW ROOM
- TECHNICAL ROOMS
- STORE ROOM
- WAITING AREA FOR THE PERFORMERS
- ELEVATORS FOR HANDICAPPED
- THE HEIGHT OF THE AUDITORIUM IS 15 M

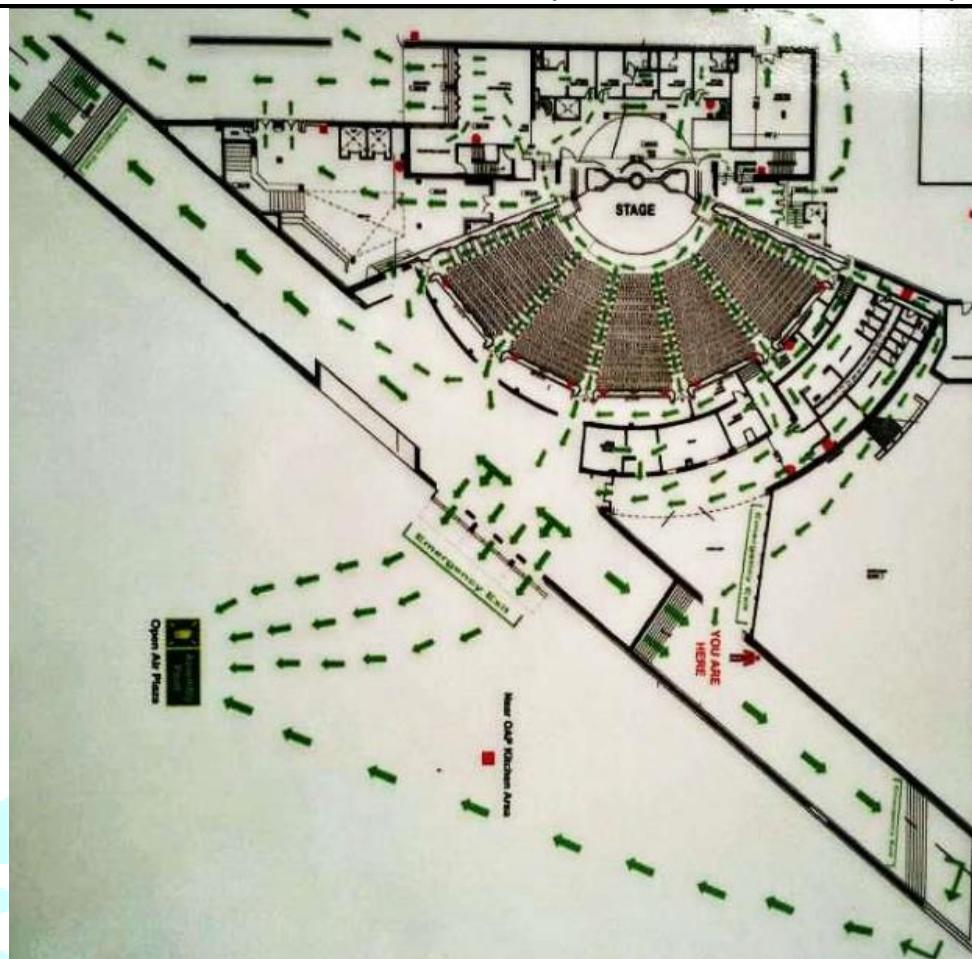


FIGURE 46: Flow plan of NCPA

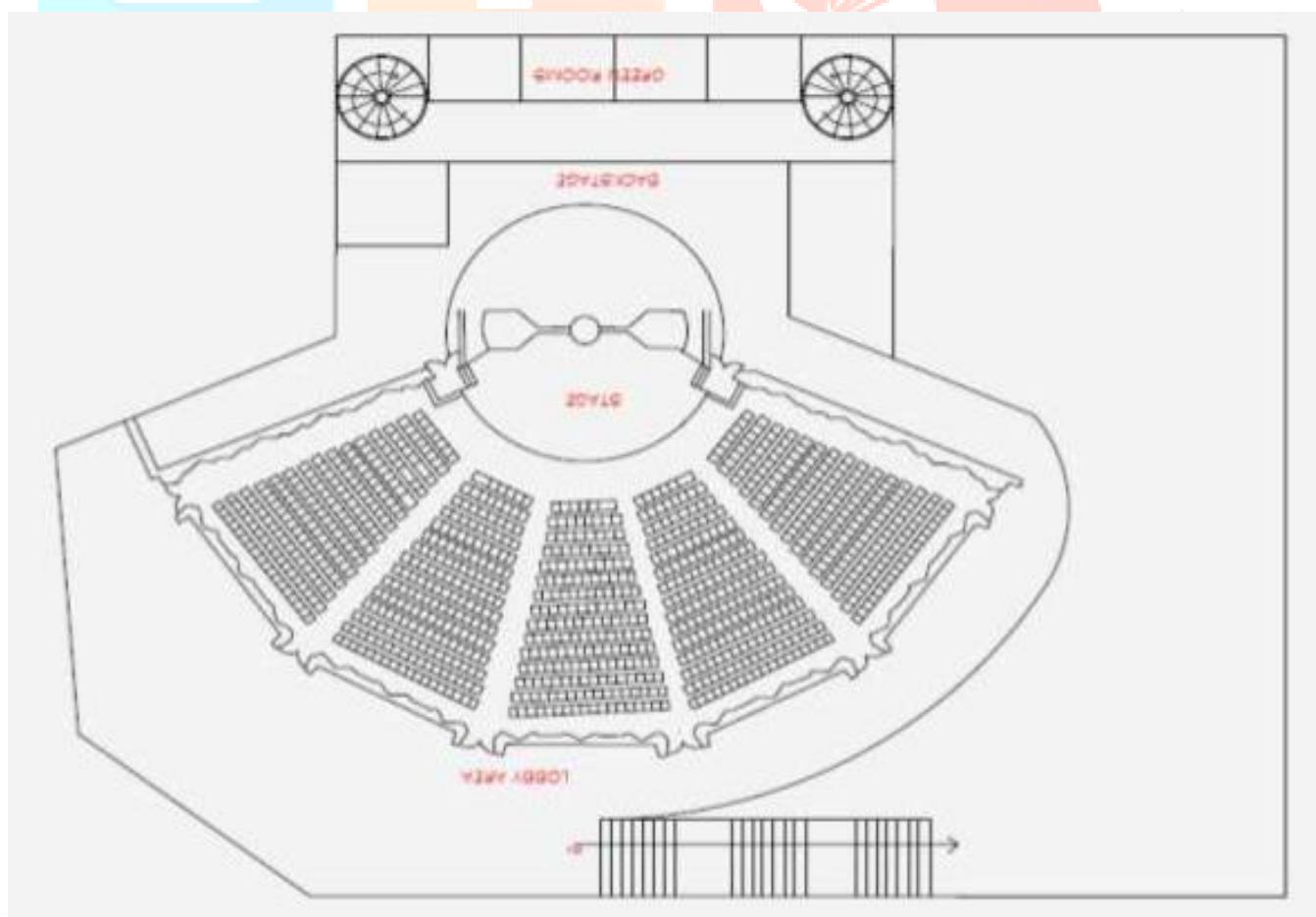
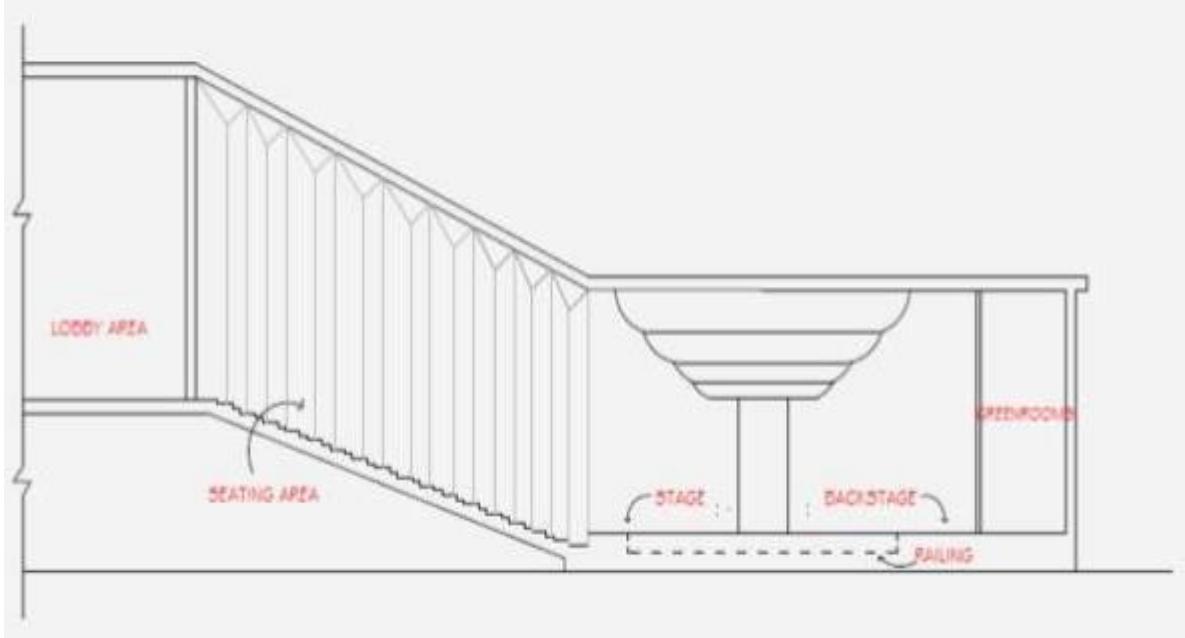


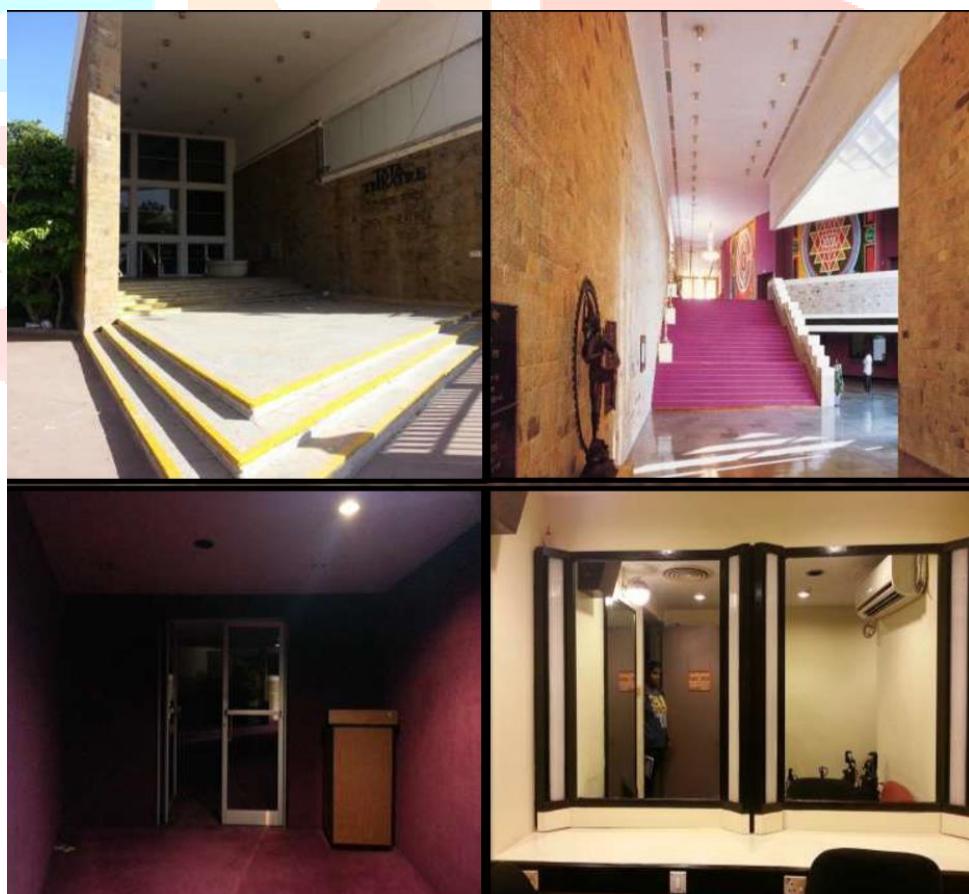
FIGURE 47: Plan of Tata Theatre



**FIGURE 48: Section of Tata Theatre**

#### ENTRY

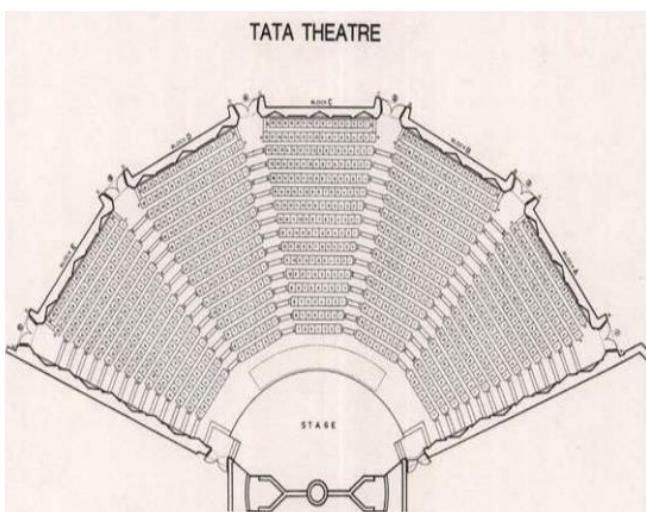
- There are separate entrances, one for the performers and the other for the audiences.
- the entry for the performer was also used as the service entry. •two emergency exits are provided near the stage.
- backstage stage
- all technical rooms • the main entry for performers
- store area
- entry to the sea view room.



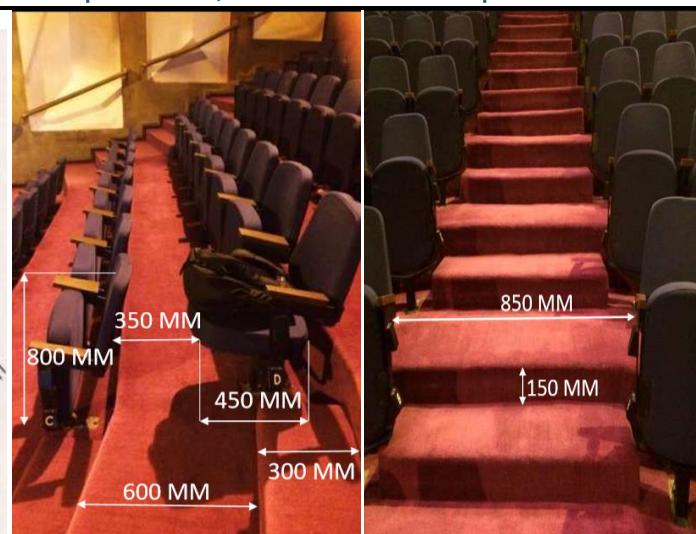
**FIGURE 49: Entry and Backstage Area at Tata Theatre, NCPA**

#### Seating Arrangement:

- The theater is fan shaped; the seating arrangement is divided into five equal parts.
- seating capacity is 1010 persons • each bay consists of 202 seats • six aisles divided.



**FIGURE 50: Fan Shaped Plan of Tata Theatre**



**FIGURE 51: Dimensions of Seats and Aisles in Tata Theatre**

#### Walls and Ceilings:

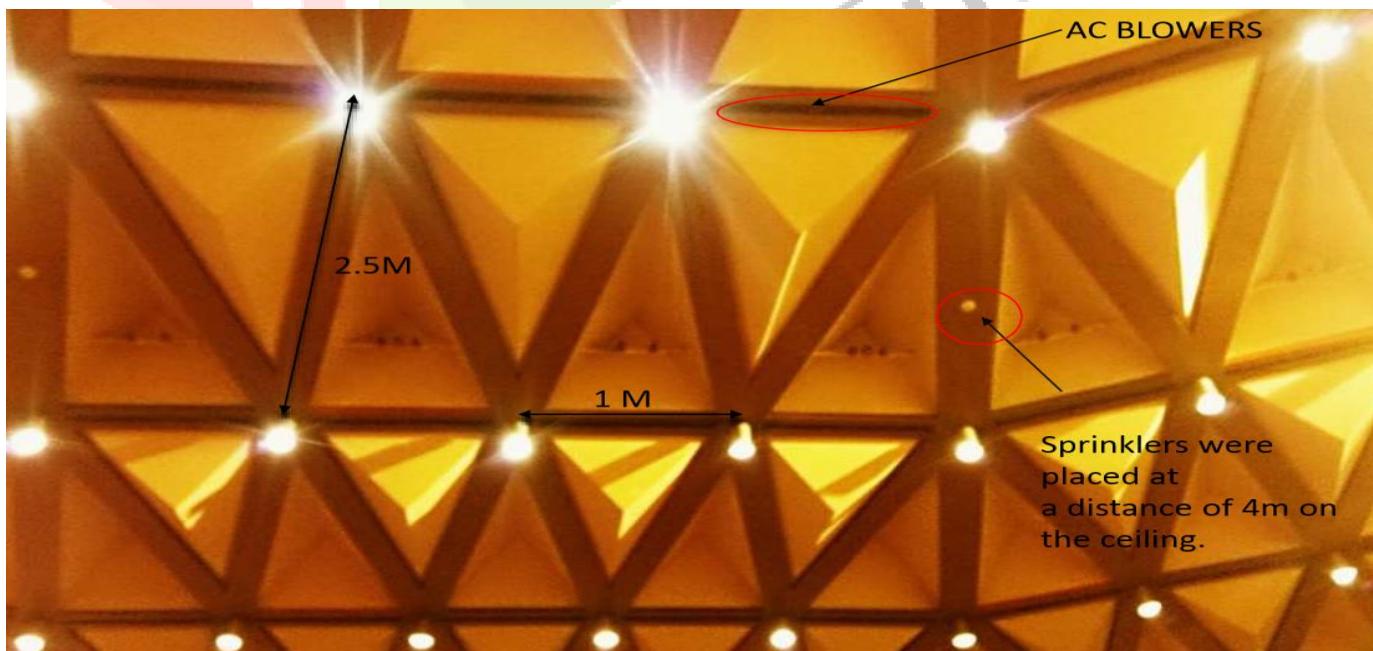
The walls and ceiling had a basic wooden Framework.

- These framework (panels) had alternate concave and convex triangular forms which ensured even distribution of sound over the entire auditorium.

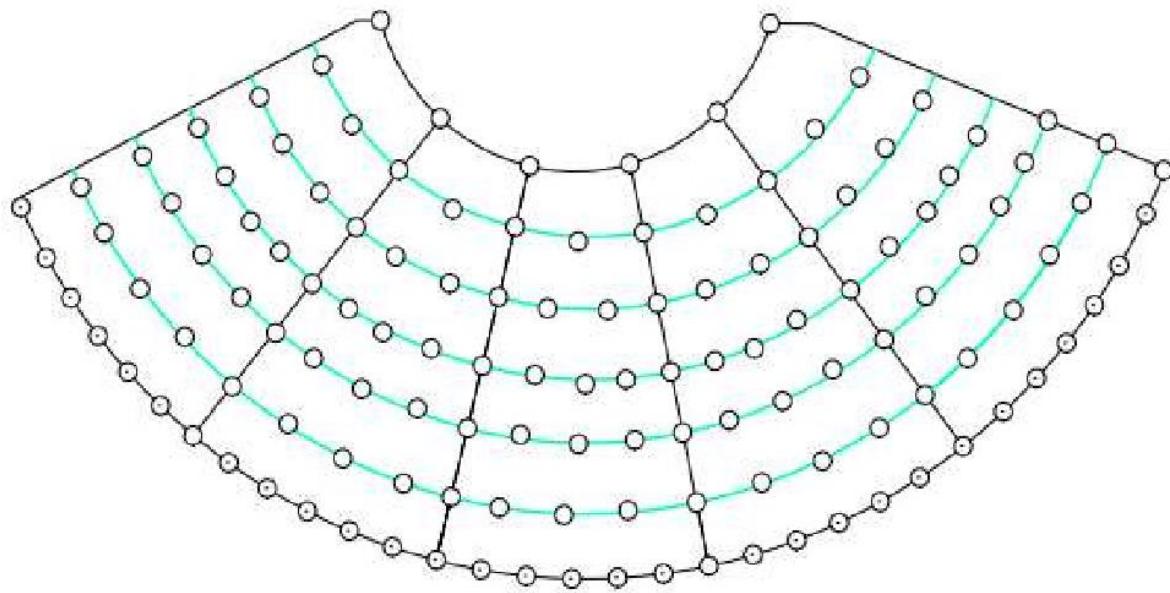
- These projections come out from the sides of the Walls. They are hollow and may act as resonators.
- These are surfaces which help in the dispersion of Sound.
- The special acoustic forms are made up of high Density compressed plaster (p.o.p).
- Due to these special acoustic methods, the voice is naturally audible at any place in the auditorium without any mikes or sound systems.



**FIGURE 52: Ceiling at Tata Theatre**



**FIGURE 53: Ceiling Services at Tata Theatre**



- POSITION OF THE CEILING LIGHTS AND AC BLOWERS
- TYPES OF LIGHTS - HALOGEN AND WARM YELLOW LIGHT

**FIGURE 54: Ceiling Plan of Tata Theatre**

**Lighting at Tata Theatre:**

A good number of lighting fixtures are oriented on the stage covering all angles

- There are halogen lights on the ceiling over the seating area
- These lights are of different types, qualities, intensities, color etc. Eg-halogen lights, spot lights, focus lights
- there were total 64 lights on the ceiling
- these lights can be dimmed or brightened as per requirements
- the lighting over the stage also had fixtures to hang the focus lights

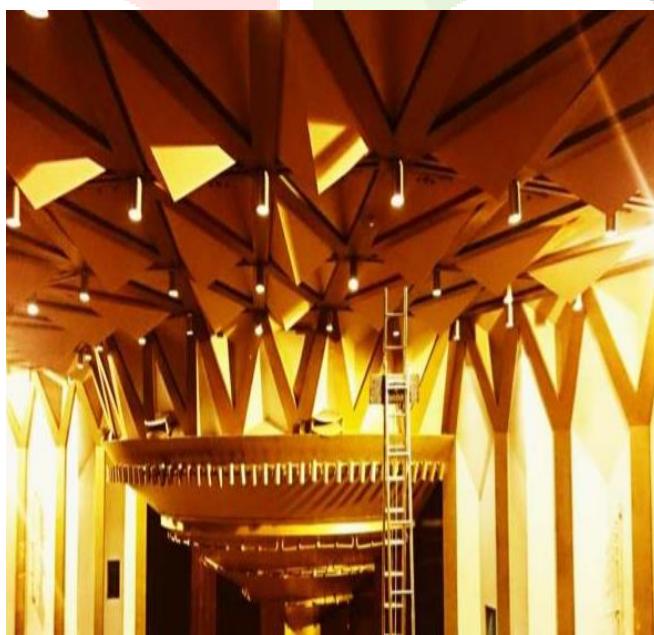
**Flooring at Tata Theatre:**

- R.C.C. floor is covered with woollen carpet.

**Stage**

- semi-circular stage • no curtains and fins
- the inner portion (upto 4.7m radius) is rotatable
- the outer portion of the stage is fixed
- it rotates 180 degree in 80 seconds
- The radius of the semicircular stage is 7m.

Stage floor •hardwood timber flooring over concrete.



**FIGURE 55: Tata Theatre lighting**



**FIGURE 56: Tata Theatre flooring**

**Air-Conditioning:**

The ceiling had a 10ft duct over for the pipelines. The auditorium was centrally air-conditioned. The blowers were on the wooden frame of the ceiling. The ac plant was in the basement of the auditorium. These were connected through pipelines to the main ac plants in the AHU (air handling unit) room.

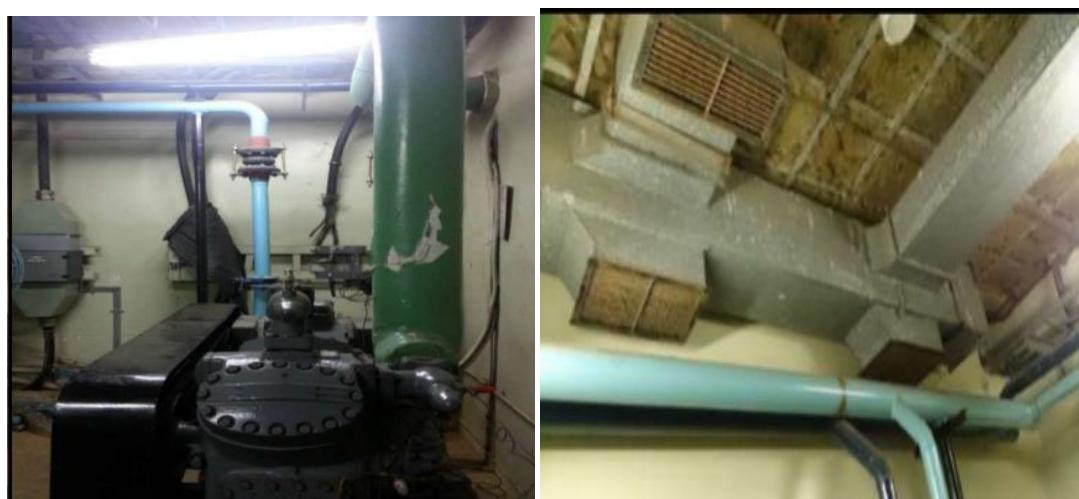


FIGURE 57: Air-Conditioning at Tata Theatre, NCPA

#### 4.1.7 Kala Academy, Goa

Location: Situated at Campal, Panaji along the banks of river Mandovi. Area has mixed land use with a military hospital across the road, a cricket ground and a park on either side.

Architect: Charles Correa

Building type: Institution

Site area: 6.3acres

Site gradient: Gentle Slope

Introduction: • Venue of international film festival of India. • 1969 - prime institution for promotion of art and culture in Goa.

Access: • Regular buses connecting Panaji and the academy are available. • Dabolim airport, 35km • Nearest railway station is Madgao, 53 km.

Layout: • Four entries to the site. • Boat jetty provided on the river side. • Coverage is about 40% • Well defined pedestrian and vehicular systems • Includes the cafeteria, garden and amphitheatre. • Site is divided into main building, service building, muktangan, parking area, the exhibition space.

Building style and character: • Designed by ar. Charles Correa. • Importance to the process of moving through the spaces in a building. • Built form has been kept low ranging from one to three floors. • This is further enhanced by the use of parapet walls for upper floors, which emphasize horizontally. • The 'pergola' above the entrance acts as an extension to the foyer of the main auditorium and amphitheatre. • Use of coffer slabs and parapet walls • Extensive use of specially designed seating.

Building level zoning: • Building is divided into three zones: Public, Administration, Academic • Provided at different levels so as to avoid conflict between these zones • Ground floor includes facilities like Auditorium, preview theatre, amphitheatre, art gallery, canteen etc, where public entry is invited • First and second floors - academic and administration facilities. • Circulation linked to the zoning is segregated through levels - ground floor for audience functions and first and second floor for staff and students with degree of inter linking.

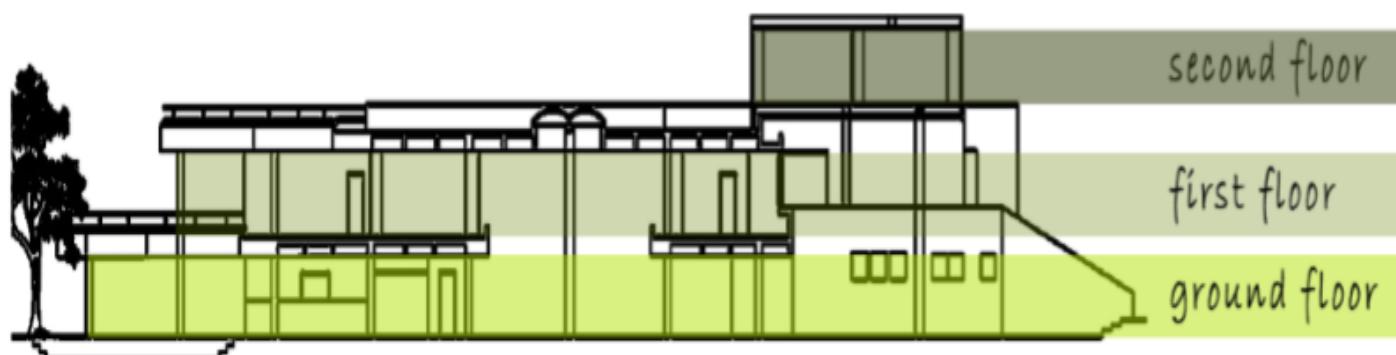


FIGURE 58: Different Floor Levels at Kala Academy, Goa

Facilities at Kala Academy:

- D.M Kala mandir • Open air theatre • Mini OAT • Black Box • Rehearsal Room • Art Gallery • Meeting Room • Guest Room
- Preview Theatre • Cafeteria • Library • Teaching Studio • Green Room • Kitchen • Administration • Reception • Lounge

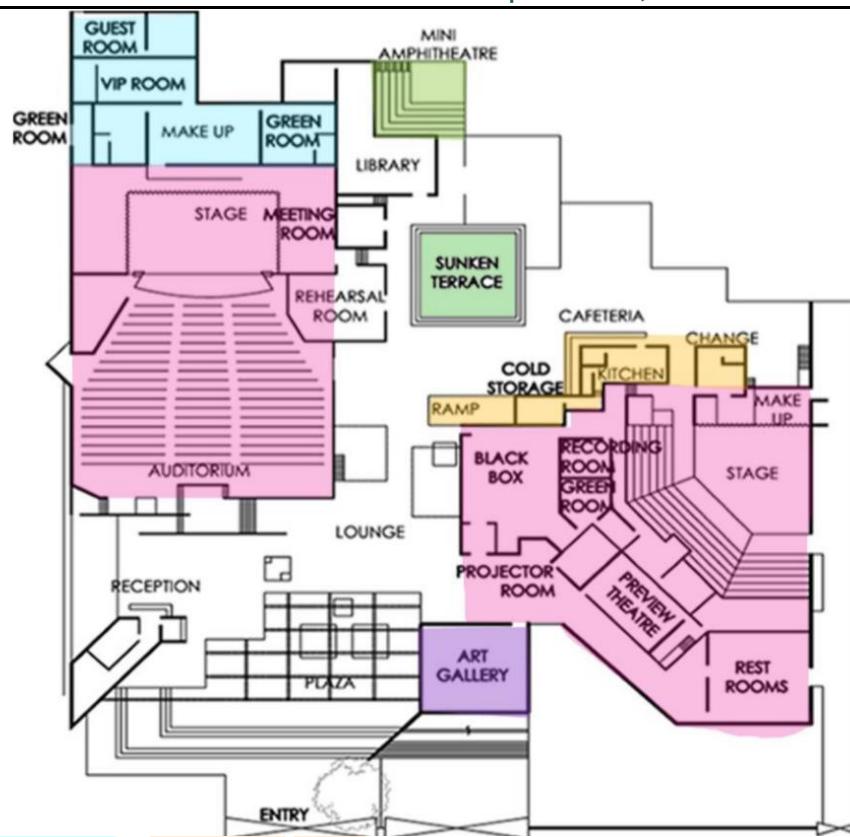


FIGURE 59: Kala Academy Floor Plan

DM Kala Mandir (AC Auditorium):

- Seating capacity – 1000 (1300 sq.m )
- Orchestra pit- 7.2 x 2.1 m
- Variety of acoustical conditions ranging from speech, plays to sitar recitals and orchestral arrangements
- Walls of the auditorium are painted illusions of an old goan theatre
- Stage is 80cm high from the first row.
- Raking height varies from 10-20 cm.

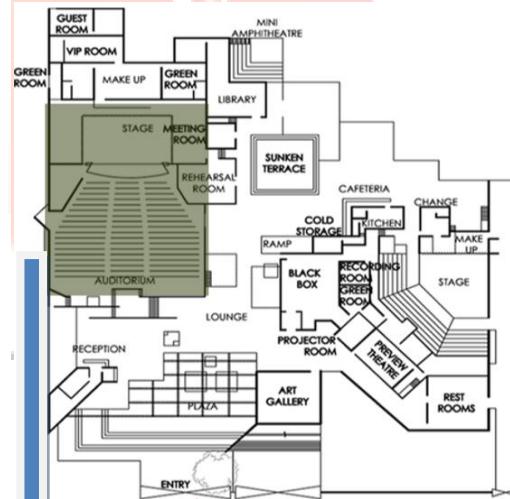
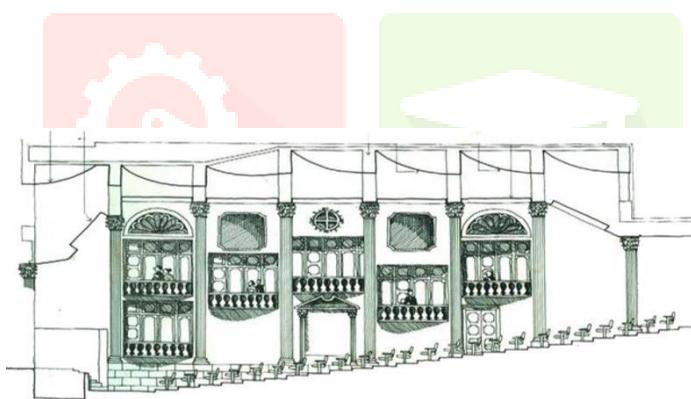


FIGURE 60: Cross-section of DM Kala Mandir



FIGURE 61: DM Kala Mandir

Mini Open Air-Theatre:

- Capacity-300 people.
- Used as an outdoor classroom and meeting space
- OAT seating has a tread of 85cm and rise of 45 cm depth.
- Farthest seat is 6m away and no implication required.
- Two aisles run along either end. Width -120cm
- The steps have 15cm risers and 28 cm treads.
- Square shape stage is and has an area of 7.5 x 7.5 m.

Open Air Theatre:

- Seating capacity (no chair) - 2000
- Seating capacity (chair) - 1312
- Proscenium opening - 15m
- Depth from curtain line- 12m
- Amphitheatre is of double herringbone shape.
- Main entry from road main lobby and the restaurant area.
- Stage is raised at 75cm above the ground floor level(eye level of the first row)
- Lower Seat rise - 30 cm and tread of 100 cm
- Higher

Seat rise of 45 cm • Acoustics are good as the seats block out noise from the road side and the stage blocks out noise from the river side.

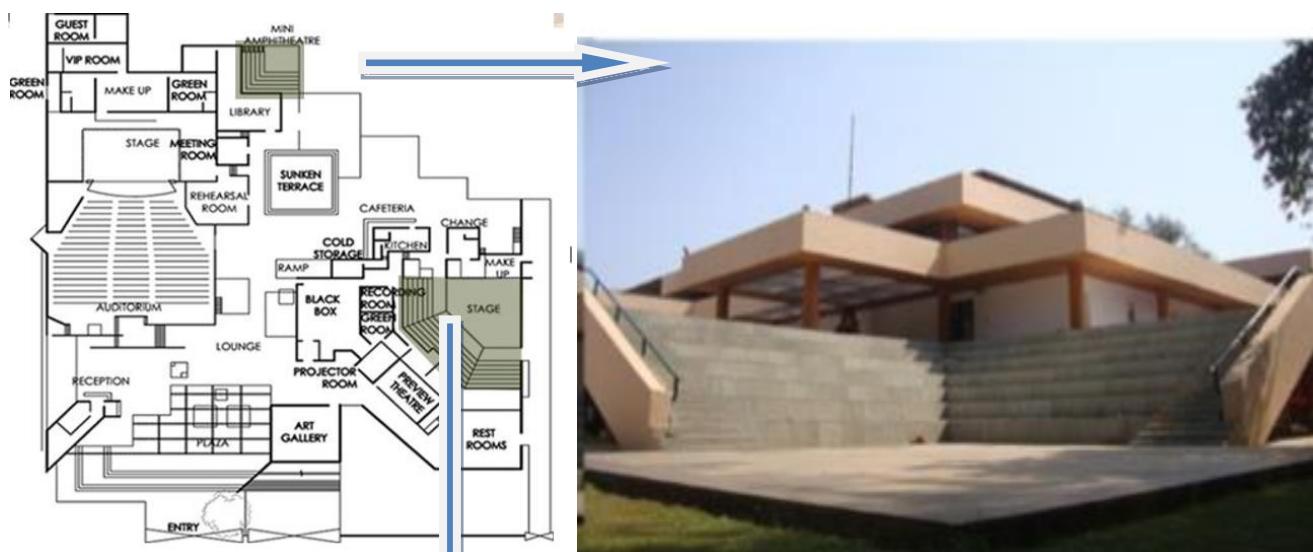


FIGURE 62: Mini Open Air Theatre

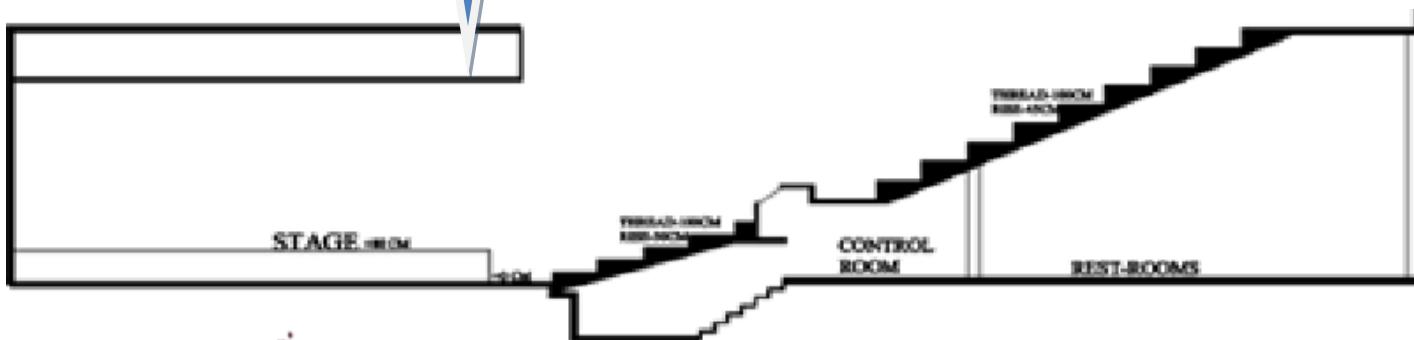


FIGURE 63: Open Air Theatre Section

#### Black Box:

- Seating capacity - 200.
- Area - 175 sq.m.
- Used for experimental productions, music concerts, meetings and amateur performances.
- Also used as a recording studio.
- Control room and a green room provided.
- Black box lobby is also provided.



FIGURE 64: Black Box at Kala Academy, Goa

#### Administration:

- Administrative area is on the first floor.
- The area divided into closed and open cabinets
- Total area -500 sq.m



**FIGURE 65: Administration at Kala Academy, Goa**

Preview Theatre:

- Capacity - 24. • Used during 'IFFI' for special screening. • Has got a jury room and projector room attached. • Particle board has been used for acoustical effect.



**FIGURE 66: Preview Theatre at Kala Academy, Goa**

Art Gallery:

- Running wall space - 30 x 1.50 mts • Carpet area of gallery – 90 sq.mts • The exhibits are displayed on the wall on four sides. • Lighting features are very normal no facility to hold a good exhibition. • Adjustable cove lightings are used in gallery.



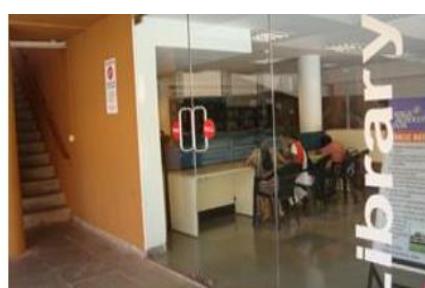
**FIGURE67: Art Gallery at Kala Academy, Goa**

Library:

- A rea- 135 SQ.M • Library is in proximity with mini oat. • Books are raked in glass shelves.

Cafeteria:

- Capacity for 100 members • Square table are provided each with 4 seats • 3 sides open in to the outdoor landscape • It is accessible from all theatre meeting room - 45 sq.m



**FIGURE 68: Library at Kala Academy, Goa**



**FIGURE 69: Cafeteria at Kala Academy, Goa**

Teaching Studio:

- All the music studios are of the same size 3.3 x 2.6ms • Central air conditioning is provided for all class rooms. • Acoustically treated classrooms with the same type of padding provided for the walls and ceilings. • Three walls are faced with linen material and glass wool, the rest is panelled with wood particle board.



**FIGURE 70: Teaching Studio at Kala Academy, Goa**

**Parking Facilities:**

- Parking facilities are provided on the south-eastern side.
- Nearly 250 public parking are provided.
- Special VIP and staff parking provided.



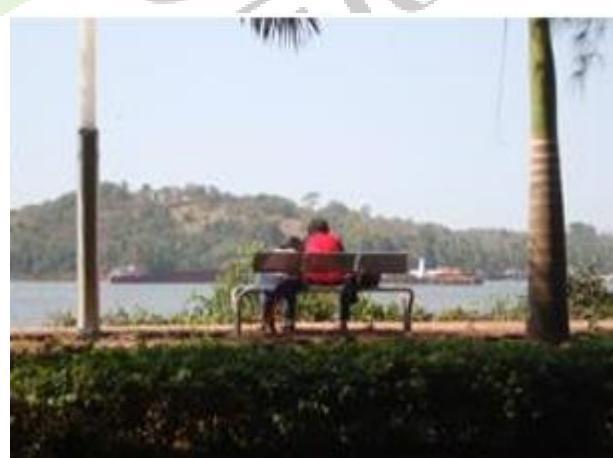
**FIGURE 71: Parking Facilities**

**Services:**

- The service buildings (AC plant and generator room) are provided on the western corner of the site without disrupting building functioning.
- Two separate service entries have been provided :generator room and the other eastern corner of the site.
- The eastern entry caters to the need of the amphitheatre and the canteen.
- A loading deck has also been provided here.
- The septic tank is provided underneath the garden.

**Landscape:**

- Beautiful lawns form the main part of the site. Trees are provided aptly at the front side of the building.
- Specially designed benches and lamp posts line the path along the river side.





**FIGURE 72: Landscape at Kala Academy, Goa**

#### **4.2 Case Study in International Context:**

##### **4.2.1 Tara Theatre, London, UK**

Location: London, UK

Introduction: Inaugurated in 2016 by Tara Arts, the oldest multicultural theatre company in UK; designed by Aedas Arts Team.

Concept: Fusing Global with local to create cross-cultural theatre to create dialogue between the East and West.

Types of events that take place: Theatre performances.



**FIGURE 73: Plan of Tara Theatre, London, UK**



**FIGURE 74: Elevation of Tara Theatre, London, UK**



**FIGURE 75: Cross-section**



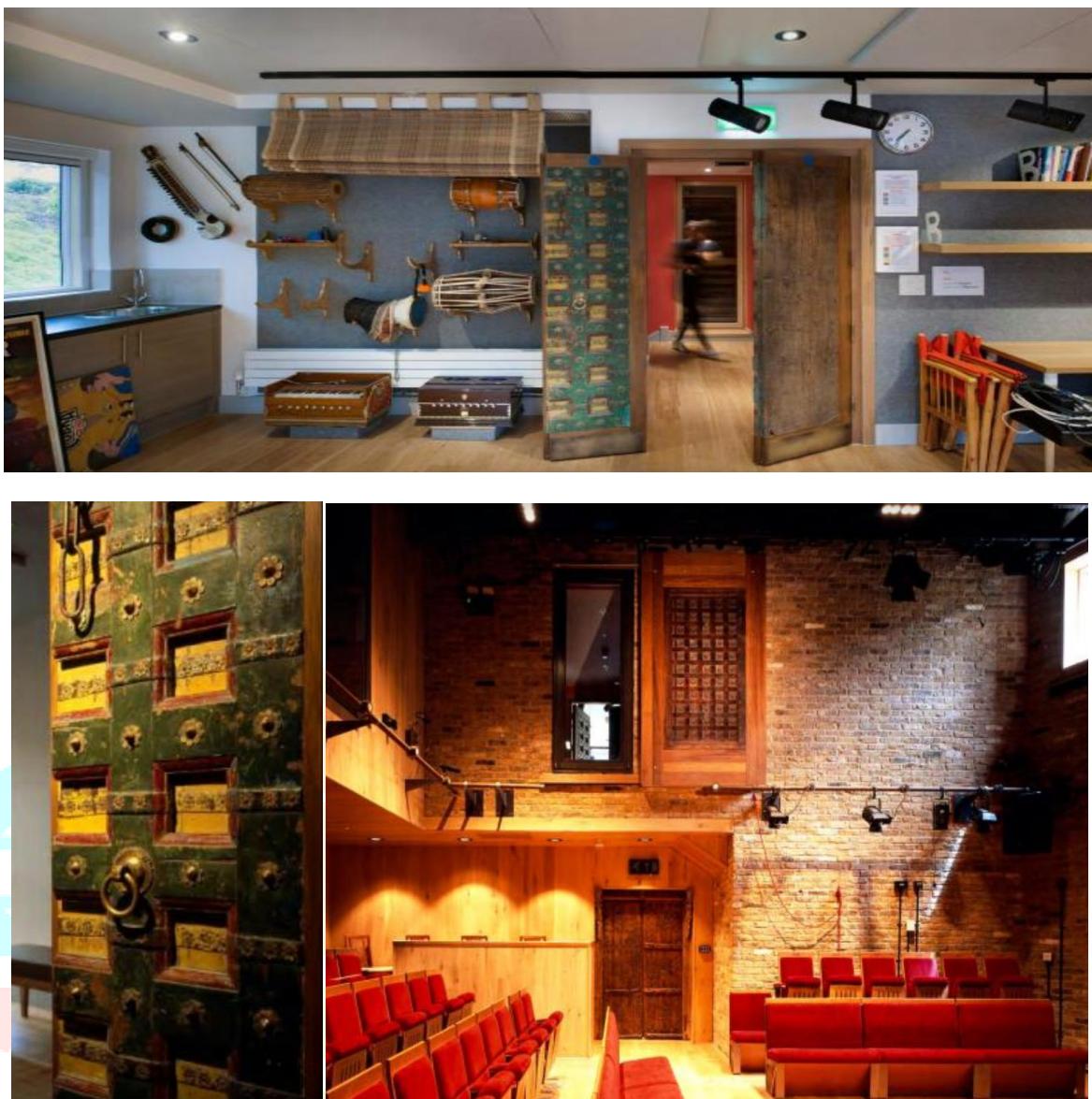
**FIGURE 76: Side Elevations of Tara Theatre, London, UK**

Theme: Indian and Modern fusion

Décor: Indian traditional decorative items blended with English structure of the building.

Colour scheme: Warm tones like browns and reds

- Integration of oriental elements in terms of décor, such as antique Indian doors in an English Theatre.



**FIGURE 77: Interiors of Tara Theatre**

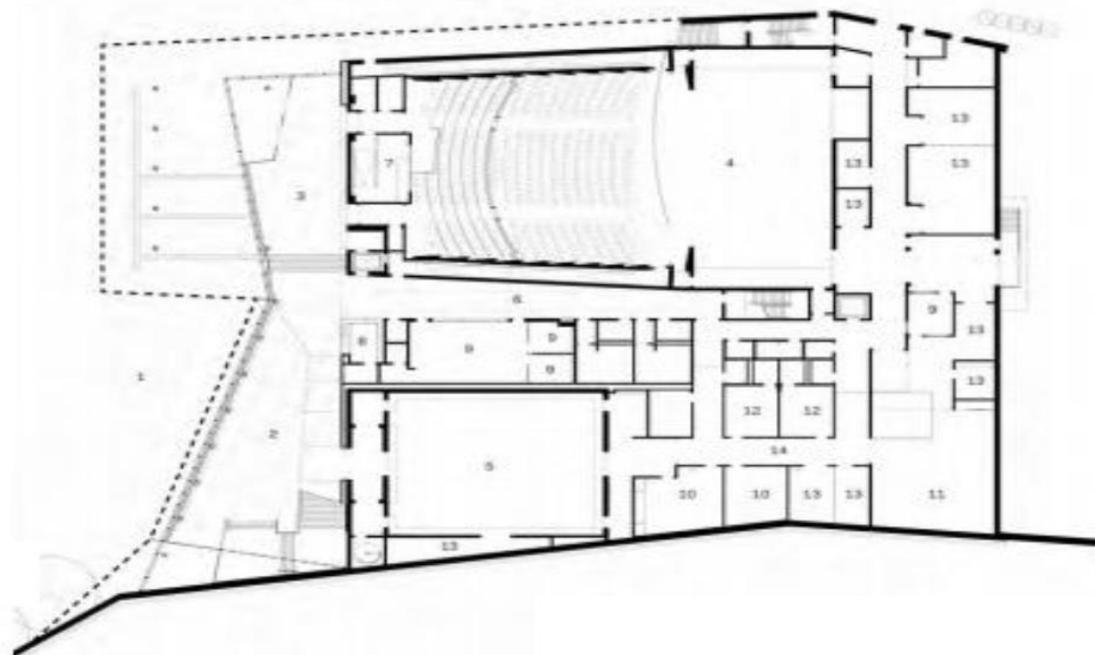
#### 4.2.2 The Marshall Family Performing Arts Centre, Texas, United States

Location: Texas, United States



**FIGURE 78: The Marshall Family Performing Arts Centre, Texas, United States**

Introduction: Built in 2016, The Marshall Family Performing Arts Centre is a part of the Greenhill School. It focuses on providing the state-of-art facilities to create an environment for performers.

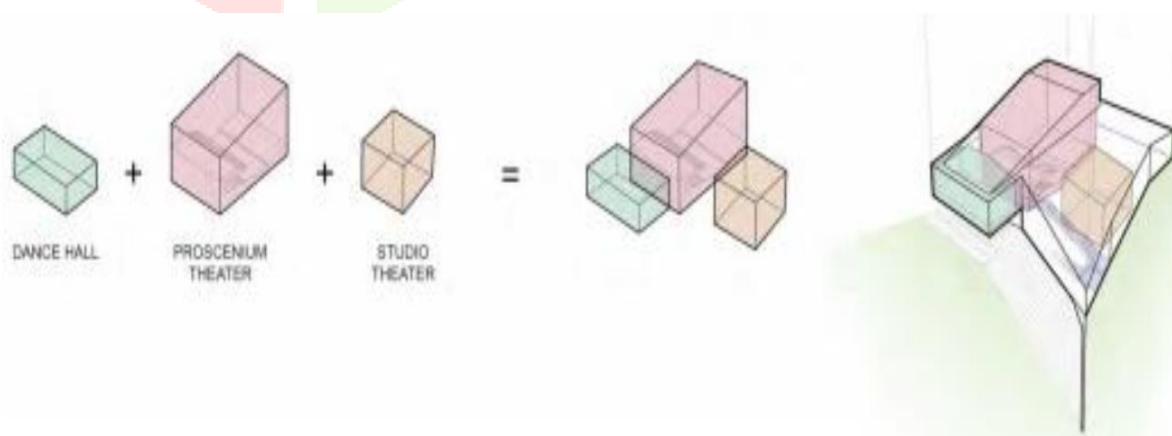


**FIGURE 79: Floor Plan of The Marshall Family Performing Arts Centre**



**FIGURE 80: Cross-Section of The Marshall Family Performing Arts Centre**

Concept: Establishing dialogue between building and campus through transparency.



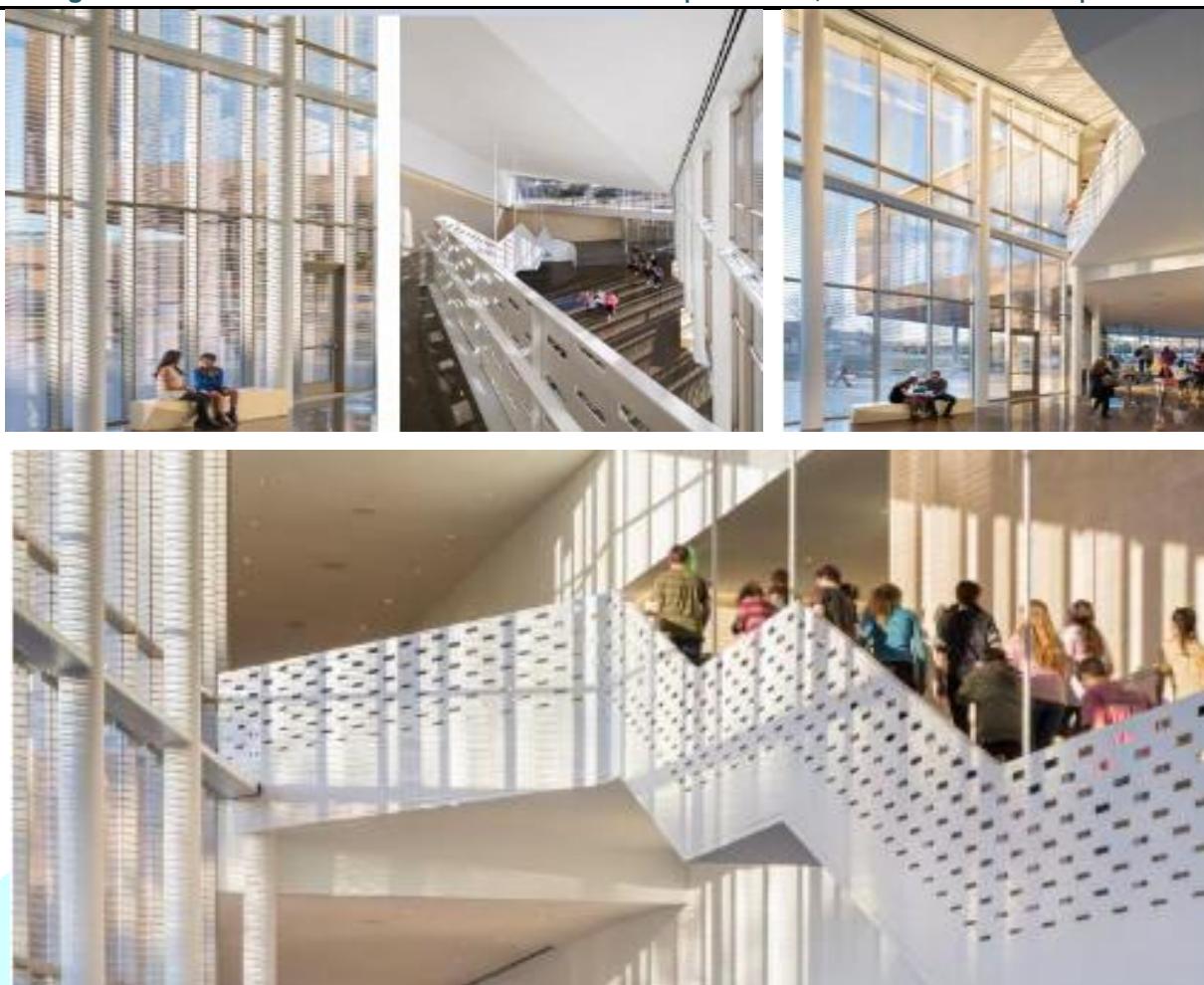
**FIGURE 81: Structure Formation of The Marshall Family Performing Arts Centre**

Types of events that take place: Music, Dance and Theatre performances.

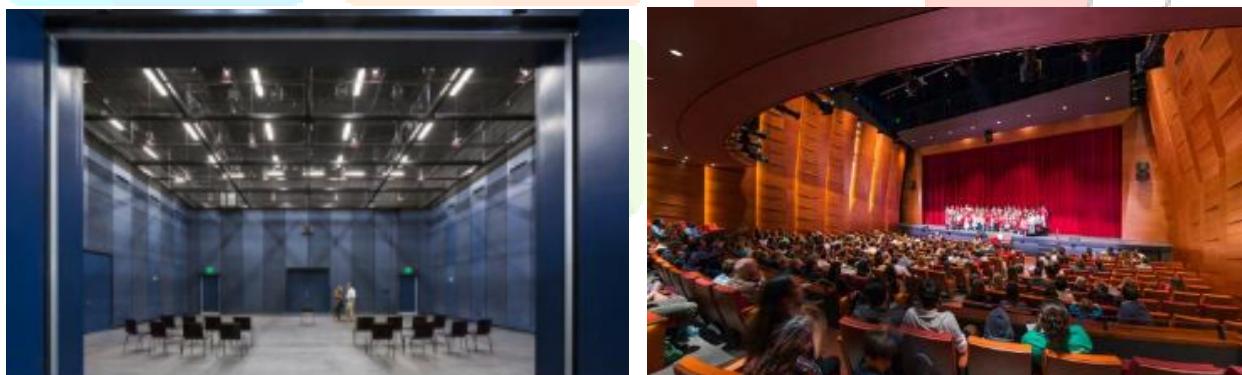
Theme: Modern Contemporary

Ambience: Open feel through all sized windows and double height spaces.

Colour Scheme: Apart from the main auditorium which has bright oranges and reds, other spaces have a cool colour palette.



**FIGURE 82: Glass Facades provides transparency and openness in The Marshall Family Performing Arts Centre**



**FIGURE 83: Interior of The Marshall Family Performing Arts Centre**

## **V. INTERACTIVE DESIGN**

### **5.1 Introduction to interactive design:**

Architectural design process is complex series of different variables in various levels and scales which has an interaction and effects on each other in order to provide the goals of an architecture project. The design activity can be considered as a new way to combine the known elements together or to introduce new concepts.

Additionally, the design activity is done mostly in groups. When two or more person involve in a design process, they have to speak to each other about it. The nature of design thinking is discussion-base. The design issues are multi-aspects and extremely interactive, mostly. It is happened rarely that each part of the design only fulfils one purpose.

Hence, interaction means a mutual relation among two or more person or groups or system. American dictionary explain the meaning of interaction as '*the activity of talking to other people or working together with them*' and also '*a process by which two or more things have an effect on each other*'<sup>[6]</sup>. So, the '*Interactive architectural approach*', which is called '*interactive architecture*' here, is an approach that the mutual relations between the factors, groups and systems affecting architectural design process are analyzed based on it and the final architectural design will be a result of a relative balance of mutual interaction of all these factors, groups and systems. Since design problems are multi-aspects, the purpose of interactive design is to achieve a level that creates a kind of balanced mutual relation among different aspects. It is important to say that the balance does not necessarily mean the equality of each force, but it means to achieve a level which the resultant of different forces and factors will be equated and neutralized by each other. So, the effectiveness of each various factors will be different.

Moreover, interactive architecture will analyze all aspects of an architectural design and make a mutual relation between different aspects of it. Eventually, the final production will be achieved in the level that the balance is established among all factors and aspects. Based on this, interactive architectural approach can be considered a kind of contextual architecture. Contextualism is a standpoint that focuses on the specific features of a place in order to use them in design. In Contextualism, the human aspects as well as the physical aspects are considered. Contextualism means adaption to physical, historical and social-cultural backgrounds. Interactive architecture also makes a multi and mutual connection with the different context of design and achieves a coexistence and integration with them. Additionally, the design provides the field of the creation and development of next designs, itself.

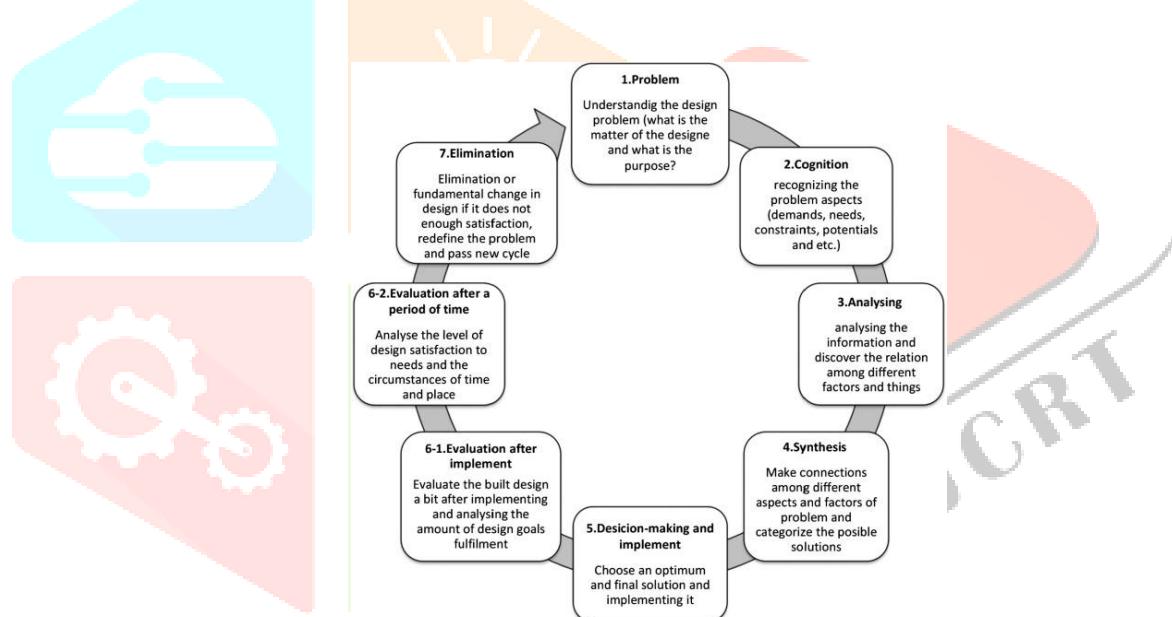
Furthermore, based on the nature and concepts of interactive architecture (which has been described), this architectural approach surveys all three factors of sense of place (meaning, activity, physical environment) and produces places that contain all three factors. Indeed, the process of interactive architecture has analyzed all these three factors and then reproduces them based on the mutual relations.

The multi mutual relations, which are created in interactive architecture, result in the dynamic collaboration of all groups and factors with design process, so that it can be considered as a kind of collaborative design. One of the bases of interactive architecture is to be collaborative and also to be able to collaborate and based on this, the users, clients and citizens participate in design process. Hence, their (mental) images about places have been extracted and then have been used to create new places and spaces. Another important result is producing of identical places with high level of sense of belonging.

In addition, interactive architecture can be discussed in fields of sustainable architecture and sustainable development. In fact, interactive architectural approach can be used as an effective and practical method in order to achieve sustainability in architecture and development. The main purpose of sustainable development was to provide the basic requirements, enhance and improve the level of living for all and also better preservation and management of ecosystems and make a secure and blissful future. Interactive architectural approach is pursuing these topics and wants to achieve the high level of satisfaction in different aspects of an architectural design.

## 5.2 Conceptual model of design process in interactive architecture:

Fig. 84 illustrates the conceptual model of design process in interactive design, based on the inspiration from the ideas and models describing the design process in architecture and then develops and adapts them to the concepts of interactive architecture.



**FIGURE 84: Conceptual model of design process in interactive design (designed by authors).**

An important point about the model is that all the stages of process are done based on multi mutual relations and the solution is not resulted only by one factor. Although the designer has a key role and manages the process and also is responsible to achieve the final solution, his effect is not unilateral and based on his desires. Points below add more details and useful tips in order to understand the model as well:

- (1) This model is designed based on multi mutual relations and the design process is done on that method.
- (2) In cognition stage, the different aspects of problem background must be studied and on that basis, comprehensive information and perception of its nature is achieved. In this stage, it must be discovered the mutual relation among problem and its backgrounds. These relations have a strategic and essential role in interactive architecture. Although depended on situations and circumstances some of the contexts may be attended more, all contexts must be studied as well as enough. In interactive architecture, the relation with all contexts has been considered as well.
- (3) In cognition stage, different scientific tools and methods can be used requirement. Semiology approach can be used as one of the methods that are capable to recognize and decode the architectural and urban environment and also the social-cultural context of problem.
- (4) The methods and researches in human sciences can be used in order to recognize the human values of problem and its background.
- (5) There will be more potential to do next stages of design and creating interaction among different factors, when designer recognizes the design contexts and design problem and also discovers the relations as well. However, the amount of designer success depends on various factors.
- (6) In next stage, the analyzing will be done based on studying and gathering information in cognition stage. Analyzing means that organizing and arranging the problem. In analyzing stage, the attempting is to make logical connections among different

factors of problem. In fact, a logical and systematically organization will be created between various groups and factors of problem, in this stage. Then, the design process will be advanced based on this logical organization. The conceptual model of this logical organization will be explained more in the next part.

(7) In synthesis stage, the solution will be achieved and extracted. The feature of synthesis is attempting to move forward and creating solution for the problem-producing the solutions. The final solution must be provided the satisfaction of all different groups and problem factors, relatively. Here, Satisfaction means adaption and sustainable relation with all design contexts and also desirability from human factors' (users, clients and citizens) point of view.

(8) Implementing the design must be done based on technical points and considered the environment and climate. The strategies of sustainable architecture can be used in implementation stage.

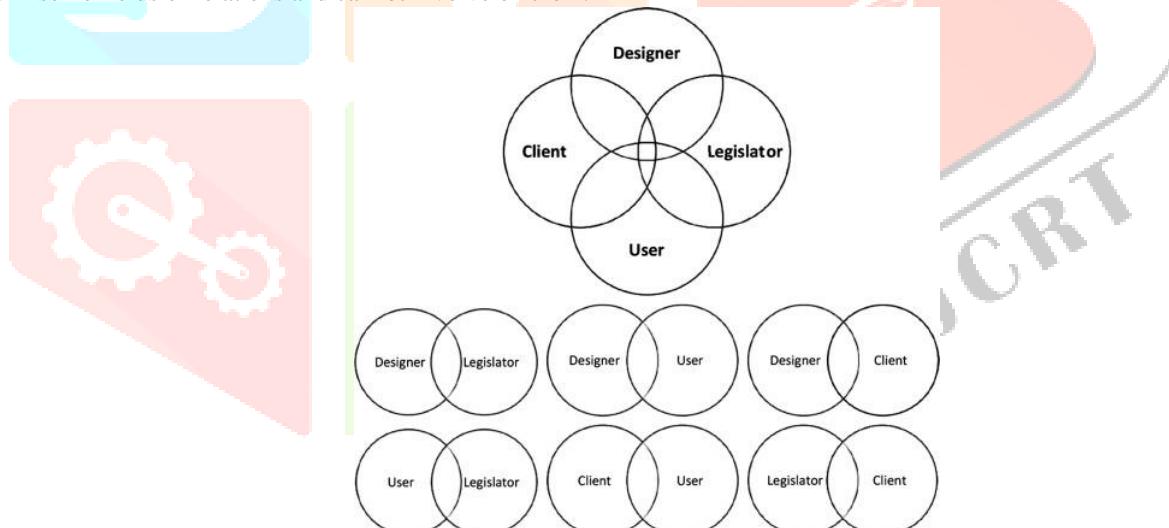
(9) The evaluation stage will be measured the proposed solutions for the purposes which was identified in analyzing stage, critically. Evaluation consists of two main parts. One, a bit after implementing the design and start using by users, the other one is after a long period of time. These evaluations are done to find the level of design's responsibility to the demands of users and also the amount of adaption to contexts, although the contexts may be changed a lot by passing the time. All in all, the design must be evaluated with its time circumstances and then try adaption until the design has no ability for adaption and needs fundamental changes or elimination. This will start a new cycle for a new problem.

(10) It is important to mention that a period of time for evaluation is various, depends on the nature of design and the circumstances of time and place. Therefore, the design's efficiency can be evaluated in various intervals until it needs the fundamental changes. Additionally, the evaluation can be done based on the signs of changes which occurred in using the design or environment or the satisfaction of users and citizens.

(11) The elimination stage is the time that the design was indicated inefficiently after evaluating and could not provide the satisfaction of the factors and groups related to the design. Therefore, the design needs fundamental changes and it must be revised. This will be the beginning of a new design process.

(12) Design process is like a cycle but the stages do not come after each other, necessarily. It can be returned to previous stage in every stage and review the stage. When the stages of a cycle are done, another cycle will be starting and this process will occur continually during the time.

The above conceptual model can be expanded for a better understanding and also the relation among different factors will be analyzed. Therefore, Fig. 85 shows these mutual relations. All these four groups are important as well in interactive architecture and none of them can be ignores or removes, although the designer has a key role. In these multi-relations, designer acts as an analyzed and must be able to make an appropriate conclusion to achieve a comprehensive solution. The solution should contain the views of all four groups. In fact, it is the designer who must find and make a final solution for a design problem. It is the designer who must be able to make a connection among different factors of design and perform analysis. However, the ability of designer is limited in some fields or relations and cannot involve on them.



**FIGURE 85: The relations of different factors in interactive architecture (top: compact model/down: expanded model) (designed by authors).**

Based on above models and points, a matrix can be illustrated like Fig. 86 and analyzing the interests of each group in different fields. This matrix is unique and differentiated based on design problem, the features and circumstances of design contexts and also the effective groups and factors. The important point is that the various designers have various views and on that basis it is possible that one or more axis may be considered more by each designer. Here, designers must be considered all axis of design as well, according to the concepts of interactive architecture, and use all of them in final solutions, effectively. This means that, in interactive architecture, the designer cannot act completely unilateral to solve design problems and ignore the other factors or groups or even impose his views or ideas. In fact, interactive architecture is multi mutual relation, as it mentioned before.

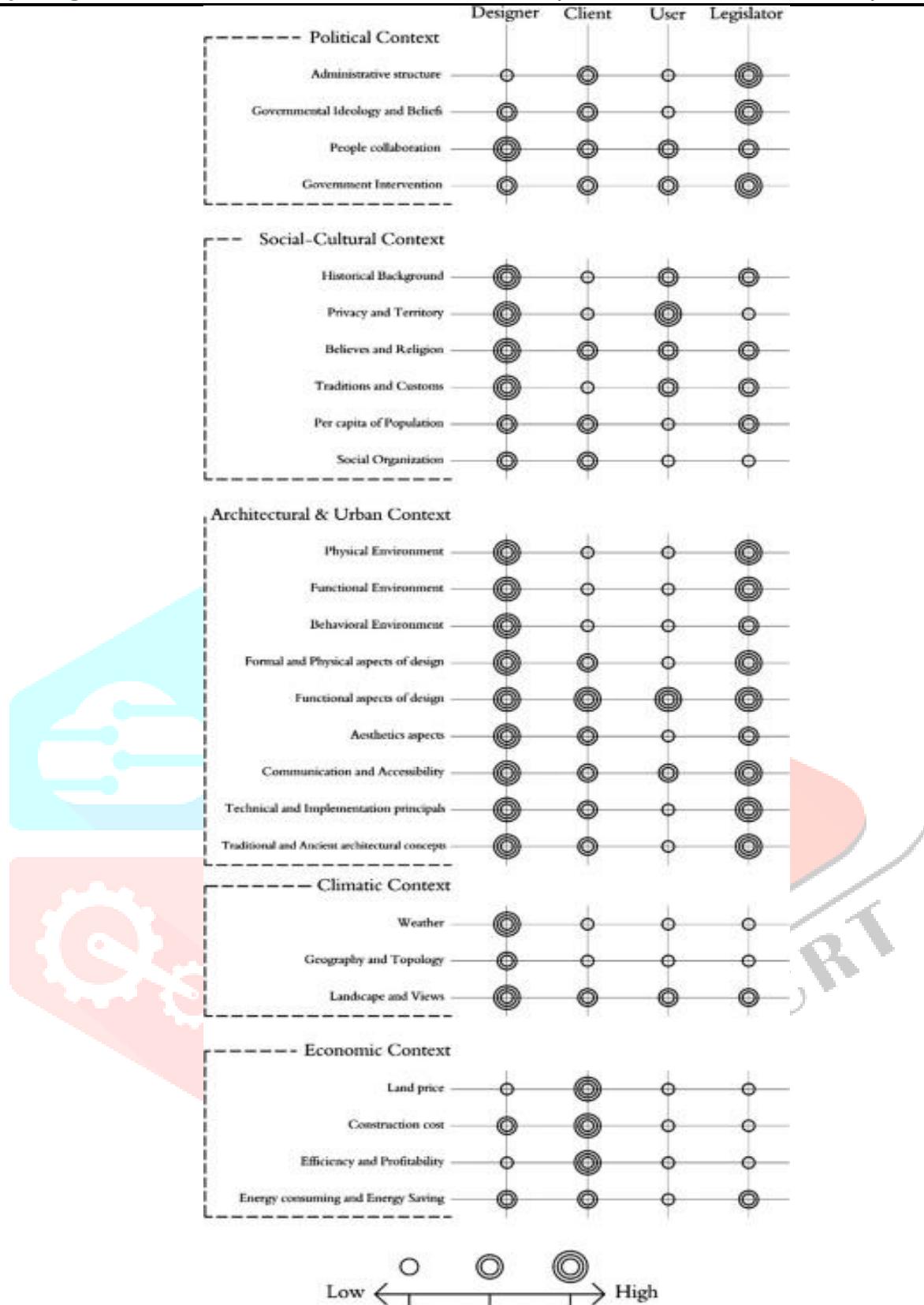


FIGURE 86: A sample of analysis matrix of interest and importance of design factors in different fields (designed by authors).

### 5.3 Collaboration and Integration in Performing Arts:

#### 5.3.1 History

Collaborations between sectors have been increasing in recent years (Wymer & Samu, 2003). The tendency towards collaboration formation started in the early 1980s as a result of technological development and maturing of the global market. The reason for an ever-growing interest in collaboration both in the public and private sphere was due to the fact that the world was changing into ways that made collaboration important, in some cases essential, to achieve success or create sustainability in the long-term (Bergquist, Betwee & Meuel, 1995). Businesses felt that they needed to form alliances to exploit competitive advantages and believed that collaborations would enable them to enter new global markets. From the viewpoint of the cultural sector, government funding of culture and arts have been severely cut in recent years on a global scale and many grants are targeted for specific programs which means that less and less funding is available for operating budgets. Arts organisations, however, are facing increasing operating costs and the audience size is stagnant or shrinking (Scheff & Kotler, 1994). With a continuous decrease in subsidies, cultural organisations more and more need to understand and practice for-profit business-making (Kolb, 2000).

Early collaborations between non-profit organisations and businesses began in the late 1980s (Tien, 2006). Nowadays, arts organisations are bringing together limited resources and form alliances and collaborations with organisations ranging from non-profit arts groups through community groups to businesses. These collaborations facilitate to join resources and share resulting benefits. A great number of collaborations are formed to achieve goals that individual organisations could not achieve on their own (Scheff & Kotler, 1994). These collaborations represent efforts to combine the best available resources, to take advantage of different opportunities in a global marketplace and to create economic, social or artistic values. Despite the fact that collaborations are risky, they continue to be established at an increasing rate.

Regardless of the size and type of the collaboration, there are certain characteristics that are common. Thus these collaborations face common challenges during their life cycle. Some given obstacles emerge when collaborations are created or when they face some changes from within the organisation or from the outside world (Bergquist et al., 1995). There are important problems arising when we talk about collaboration in the creative sector. Since cultural value is mainly intangible, the economic valuation of cultural value is problematic and there are often problems with the protection of IP. Secondly, there is a great variety of differences in approach and culture between organisations regarding a formality, hierarchy or business practice, which also creates difficulty in collaboration formation (Kossen, van de Poel & Reymen, 2010).

### 5.3.2 Economics of Performing Arts Industry

In order to talk about collaboration in the performing arts sector, it is important to understand the particular characteristics of this industry. First of all, there are two types of performing arts organisations: the performing arts company —the presenting theatre—and the performing arts firm —the producing theatre— (Throsby & Withers, 1979). Voss, Cable and Voss (2000) explain the differences between presenting and producing theatres. They claim that presenting theatres typically have little or no involvement in the design and production of the shows they present whereas producing theatres are highly involved with the development of a new performance. There are, however, as we will explain later on, various examples of theatres that are in between, such as performing arts firms with an in-house theatre group.

Secondly, there are different disciplines within the performing arts sector. Most researchers in the field talk about performing arts in general but when digging deeper into the subject we see that there is no clear consensus on which genres are included in the sector. For example, DiMaggio (1986) makes a distinction between the genres of orchestral music, opera, theatre and ballet, whereas Brown and Novak (2007) make a different distinction including music performance, dance performance, musical and stage play. Preece (2011) claims that performing arts traditionally include dance, theatre, music and opera. Based on these examples we can see that the distinctions are time-driven and arbitrary.

An art performance, before being presented to its audience, has to transfer through various phases. In order to create and produce a performance, the performing arts organisation has to follow several steps, which are included in the so-called performing arts event cycle: the early idea development; the formal planning process; engaging resources to establish the performance; preparations; rehearsal which also includes marketing and ticketing; and finally the performance (Preece, 2011). Porter (1985) introduces the concept of the value chain as a means for managers to consider their activities that add value to this sequential planning process. Each stage or link adds value to the viability of the organisation. That is why; links in the chain are mutually dependent on each other. The value chain ought to be efficient in order to provide competitive advantages required in the market place. Preece (2005) applies this mode to the performing arts sector. He categorises the work of the performing arts organisation into two types of activities: primary and support activities. In the performing arts sector, primary activities include the following elements: programming, personnel, promoting and production. Programming includes the artistic programming of a performing arts firm or the artistic output of a performing arts company as well as the artistic view of the organisation. Personnel consist of the people that work on the core of the production of the art form. These are the essential participants in the performance, such as the performers. Furthermore, the arts performance needs to be promoted to the potential audience, which will be the primary activity of promotion. Finally, space and equipment to rehearse and perform need to be available, which falls under the activity of production. As discussed before, these four primary activities need to be apparent in order for the art performance to take place. Since each primary activity leads to the next primary activity, we can speak of a chain. Each activity, however, can also influence the other three activities, influencing the organisation as a whole. Support activities sustain or hold together primary activities (Preece, 2005). These activities are: governance, administration, fundraising and outreach. While governance is the oversight of the whole organisation, administration consists of the management of functions within the organisation. Fundraising refers to all efforts to garner resources such as subsidies. Finally, outreach includes efforts to build bridges with communities where art organisations perform or reside.

One has to keep in mind that the entrepreneurial process of a new production rarely goes this linear. For example, individual artists come and go, new ideas can reshape the artistic side of the production and organisational boundaries might not be that clear.

### 5.3.3 Collaboration in Performing Arts

In order to generate more income, there is an increased tendency by organisations to focus on competitors. Voss and Voss (2000) name three distinct orientations of firms: customer orientation, competitor orientation and product orientation. When an organisation manages a competitor orientation, the organisation commits to integrate competitor intelligence into the product development and marketing processes. Previous research typically has predicted a positive relationship between competitor orientation and the viability of the organisation on the assumption that this orientation provides the firm a better understanding of its environment and customers, which ultimately leads to enhanced customer satisfaction. This observation is consistent with Scheff and Kotler's (1996) argument that arts organisations should seek strategic collaborations with other arts organisations to improve quality, build audience and cut costs.

Theoretically, when two institutional actors perceive that they share values, they tend to seek each other for reasons including basic comfort, expectations of trust, and better communication. Furthermore, the empirical results in the research of Voss and Voss (2000) prove that the values of theatres are significantly related to the managers' beliefs concerning the external constituents that share those values. These results confirm that organisational leaders rely on their firm's key cultural values to identify external constituents that they believe are suitable partners. The results of Voss and Voss (2000), however, suggest that though competitor orientation leads to improved attendance and higher revenues, it also seems to lead to higher costs and lower net surplus/deficit.

These results might refer to additional direct costs associated with implementing the activities of the competitor or additional coordination costs associated with the collaboration.

Collaborations are formed to exploit opportunities in terms of different resources such as “connections to target audience, administrative expertise, artistic expertise, volunteer time, fundraising and financial capabilities, space, and, generally, knowledge and experience...” (Ostrower, 2003, p. 37).

Cultural participation is also an important objective for cultural organisations to collaborate. Performing arts organisations can broaden, deepen and diversify participation by “engaging more of the same types of people in cultural activities, deepening the experiences of those already engaged, and engaging new groups of people” (Ostrower, 2003, p. 9). If a performing arts organisation aims to engage new audience, it is crucial for the organisation to find a partner that has a greater understanding of the extended target audience and a more extensive network in the target community. Collaborations can also serve as a tool to expand fundraising capabilities by attracting new donors. Especially for smaller organisations, partnering with a larger organisation can result in increased visibility, legitimacy and higher chances with funders. Collaborations can often induce unanticipated benefits for performing arts organisations due to an enlarged network.

We can find different types of collaborations in performing arts, such as: (1) collaboration between organisations in different artistic fields; (2) collaboration between large and small organisations; (3) cross-ethnic collaboration; or (4) venue-related collaboration. Setting up collaboration by organisations working with different cultural forms and themes can help performing arts organisations to expand or extend artistic programming. In case of collaborations between large and small organisations, small organisations tend to benefit from a more professional administrative and financial expertise of the larger partner, and larger organisations have the opportunity to exploit the smaller partner’s connections or expertise with a given target audience. For performing arts companies that do not have a space for performing and rehearsing, access to a venue might be a major reason to collaborate. A good example for venue-related collaboration is cooperation between a dance group and a theatre (Ostrower, 2003).

### 5.3.4 Different types of collaboration between venues

- **Collaboration on the national level**

The most frequent form of collaboration between venues on the national level is exchanging experiences and knowledge. There is, however, a fine line between exchanging expertise and sharing valuable information that can be used in a competitive way by the other party. Programming is a special area because organisations often fight for the same artists which inevitably create cautiousness about sharing specific information. There are two different forms of network-type collaborations. Several associations exist on the national level to enhance the exchange of knowledge and expertise between venues, such as the VSCD, VNPF or NAPK. This third party facilitates knowledge exchange by organising regular meetings and keeping the members well-informed. Venues, however, often decide voluntarily to set up smaller networks with organisations that they have a common vision with. As the members of the associations are highly heterogeneous, organisations often feel the urge to search for partners who are similar in many respects and face the same challenges. Network-type of collaborations represent an efficient tool when organisations want to join forces to increase organisational efficiency by exchanging useful information with each other.

- **Collaboration on the local level**

Collaboration on the local level mostly occurs in the form of organising joint-projects together and forming a strategic alliance. Project-based collaborations are set up to realise a project, a product or an event together. These joint-projects are mainly incidental, formed on a short-term basis. If the efforts result in success, the partners are often encouraged to repeat it on a regular basis. Joint-projects mainly result in added artistic and social value and the invested resources are usually less compared to other more intensive forms. Project-based collaborations give venues a good chance to get to know each other and build up a collaboration history together. This type of collaboration is the second form in our framework (see Chapter 4.1.2). Furthermore, cultural organisations on the local level often join forces in order to increase lobbying power for art and culture in a given city. The mission of such an alliance is often to strengthen the cultural climate of the city and to become a negotiating partner of the local government. Not all of the cities reached this point in development but it is a crucial step for cultural organisations in the future.

- **Collaboration on programming**

Although, venues adjust their programming decisions to the programs of other theatres and pop venues in the close surrounding, the research showed that it is an area that has to be improved in the coming period. Not only theatres and pop venues in the same region and in the same province but also local institutions —theatres with other venues in the city— need to collaborate more on programming decisions in order to accommodate, adjust and harmonise the programs to each other. Harmonisation also involves specialisation in certain genres. As a result of the subsidy cuts, it will be less and less manageable to program everything. That is why; the division of programs between different venues and locations is a crucial step in the future.

- **Collaboration on marketing**

Performing arts presenters collaborate with each other on different levels on the field of marketing. Collaboration on this field mainly involves activities such as publishing each other’s performances in the yearly booklet or organising intensive marketing campaigns together. Harmonising audience data is an important field for future development. By building up common databases, theatres and pop venues can benefit enormously from the acquired data and can better understand their target audience. Due to continuously decreasing audience number and financial support, attracting new audience and retaining the already-existing audience are two fields where marketing has an outstanding role. As one of the interviewees emphasised, not only getting more information about audience segments but also investing more in pre-sale and after-sale promotion is an area where further improvements can be achieved. Another participant of this research study highlighted that designing and implementing a good marketing strategy is essential for performing arts organisations at the moment due to difficult external circumstances. Thus well-educated marketing professionals with great expertise are more and more needed in performing arts organisations.

- **Collaboration on sponsoring**

Although, joining forces in the local community can help to increase lobbying power for culture, this system does not work for sponsoring. In case of sponsoring, the giver wants to make sure that the money goes to a certain organisation and it rarely occurs that the sponsor is willing to support the whole cultural scene in a given city. “Sponsors often don’t want to give money to a whole group. It is a lot about personal connections, trust and like-ability.” (Renske Verbeek, De Kroepoekfabriek) Another problem that occurs when organisations form a sponsoring alliance is that the speed of jointly designing a sponsoring application does not meet

the speed that is needed for the actual sponsoring offer. With several partner organisations the process can take longer than expected.

Research in recent years showed that in general companies are not willing to sponsor venues anymore. They sponsor an idea or social responsibility programs. This fact calls for new strategic orientation with different effects on the communication and marketing strategy. What are the underlying reasons of this changing tendency? One explanation could be that the role of sponsoring in the cultural field is changing. "There are no sponsors who just give money nowadays. It is about partnerships in particular. Companies often want to develop special activities for their customers or their potential clients." (Geert Overdam, Theatre festival Boulevard) Sponsoring is more and more becoming a specific partnership where the sponsoring body expects additional values to be involved and generated. It is no longer a money-based transaction.

- **Collaboration in the back-office**

A more intensive way of collaboration is sharing back-office tasks together, such as administration, finances, and technicians or purchasing material together. A lot of performing arts organisations realised the benefits of purchasing office equipments together. By joining forces performing arts organisations can benefit from reduced prices, discounts, better deals and better services. "We buy all the office equipments such as tapes or pens together with other cultural institutions in the city. That is a small thing but we have a good deal with the supplier and we get discount." (Jeroen Blijleveld, Patronaat) Having the same printing company for several venues or making a common beer deal have the same benefits. This is third collaboration type in our framework.

### 5.3.5 Different types of integration between venues <sup>[7]</sup>

- **Shared employees**
- **Shared back-office — partial and full integration**
- **The merger of theatres**
- **Cultural mega-complexes**

Moving several performing arts organisations into one building and thus establishing cultural mega-complexes is a relatively new trend in the sector. There are several examples in the Netherlands such as the institutions CODA, Haarlemmermeer Cultuurgebouw, Nieuwe Nobelaer, Cooltheater, SCHUNCK, ECI, Energiehuis, de Nieuwe Kolk, Muziekkwartier and so on. Although, the participating parties are from different disciplines, there are some common challenges that these often merged organisations have to face. The following part discusses the challenges that might arise and the pros and cons of these cultural multi-complexes.

The research study found out that the most significant advantages of building cultural complexes —where several cultural organisations are operating in one building— are product diversification, cross-over programming, and additional benefits resulted from each other's audience segments. An efficient implementation process, however, is critical for the long-term success of the collaboration. Efficient implementation means that the participating parties are able to exploit their strengths and willing to discover the possibilities that working together can offer. Product diversification in this case implies the creation of new products by adding together the products of the individual organisations thus creating a broader spectrum of supply. A good example could be educational programs for schools that contain several disciplines in one package such as classical and pop music, reading and performing arts education.

These building projects are mostly initiated by the local government. By constructing a new cultural complex, organisations within the city can move into a new building with better facilities. It is, however, often overlooked how the institutions can manage their operations in the new building and particularly how they can work together in an efficient way. Organisations often decide to form a joint venture which becomes an umbrella organisation above the different labels. Joint-ventures are mainly established to perform certain activities in these buildings, such as building maintenance or the marketing of the whole complex. The main motive is to cut costs and increase efficiencies and thus gaining financial benefits. This is the 5th form in our collaboration framework.

### 5.3.6 Conditions for optimising collaborative processes

The 3 pillars of optimising collaborative processes are structure, collaborative awareness and strategic outlook. These three important conditions have to be present in order to realise a successful collaboration and none of these 3 dimensions are enough only in themselves. The empirical investigation revealed that in order to achieve the planned objectives, organisations need to have the right structural forms, collaborative culture and a common strategic outlook.

Conditions for optimising collaborative processes	
<b>Structural conditions</b>	Voluntary intention and organic development A shared collaboration history Well-harmonised logistics — efficient communication, regular meetings
<b>Cultural conditions</b>	Transparency Commitment Trust and openness Mutual investment of money, time and resources Belief in the collaboration from both sides Willingness to give up privileges to realise a common vision Human element — working chemistry, match of experiences Equality Homogeneity of partners in type, value, workload, speed, capacity, number of inhabitants in the service area
<b>Strategic conditions</b>	Scale The skill of listening and searching for commonalities Clear communication of the Director's vision to the employees Spending personal time together
<b>Additional conditions for mergers</b>	Urgency Clear identity before collaboration Well-defined common vision and clear objectives Mutual gaining point Value, goal and mission alignment Realisation of a goal can only be achieved by common action
<b>Additional conditions for co-productions</b>	Neutral director A consultant with extensive experience of integration processes Timing Intrinsic urge Formalisation Artistic match Respecting differences in organisations culture and structure Active involvement of employees

TABLE 3: Conditions for optimising collaborative processes

## VI. ANALYSIS

Despite being designed differently, each art centre serves a common purpose of providing a space specifically for display or performance of an art form. Performing arts centres has a different function than a visual arts centre in terms of how audience views the art and the atmosphere created. Delhi is very diverse culturally and there are variety of arts centres are as well with different concept and motive according to the users and audience. The history, theme and concept of the centres define the atmosphere, styling and space planning of the centres. Most of the art centres were built after post independence, so are of modern style architecture and interiors. There have been more spaces in cooperated in the performing arts spaces that not only add value to the centre but it helps in engaging audience in more ways as well.

For the decreased footfall in these centres and governmental support, collaborative processes in the performing arts sector increased in recent years. In general we can state that if performing arts organisations have the opportunity to search for a suitable

partner voluntarily, the chance for success in the long-term is bigger because the collaboration grows as a natural process. Thus a bottom-up process has a higher potential to facilitate success and growth opposed to a top-down method. The report also discussed the collaboration activities of companies. The most common collaboration partner of performing arts companies are other performing arts companies. These organisations collaborate to enhance artistic, financial and social value and the most common way of working together is engaging in co-productions. Collaborative activities are carried out both in the front and back-office. Companies frequently share artistic members to save costs and enhance artistic benefits. Factors that enhance a successful collaboration are the pursuit of a common goal, recognising and respecting each other's differences in organisational culture and structure, a shared artistic vision and a shared collaboration history. Regarding successful co-productions we observed that working together voluntarily is an important condition. On the other hand, the forced character of collaboration in the back-office is in some cases a contribution to success. However, companies argue that sharing departments in the back-office can often lead to the fact that the employees have insufficient time to focus on the specific artistic products. Regarding integration, research found out that joint ventures between companies are created to enhance financial and artistic value, while mergers are mainly implemented to enhance artistic value.

Beside this there have been several government schemes and strategies as discussed in chapter 3, which helps and benefits performing arts in the different levels and ways. The schemes granted by government helps artists and the various others associated to this industry either being financially or being providing a better platform.

The performing institutions are also been increased in number and the facilities and grant scheme have also been duly increased as mentioned in XII five year plan of Ministry Of Culture, Government of India.

## VII. SUGGESTIONS

A lot of performing arts organisations and several governmental bodies such as the local and national government are looking for ways to improve the performance of performing arts institutions. Study found out that collaboration and integration is a way to do so because it could enhance artistic, financial and social value. It gave an overview of these different types of collaboration and integration and underlined which value could be created or enhanced.

All in all, the main axis of the suggested approach is comprehensive interaction with all various aspects of design, since the design problems have multi-aspects, mostly. It is believed that most of challenges and difficulties in design can be eliminated or even decreased by using interaction approach in design process. In this approach, the ability of flexibility and adaption is so important and vital. The designer has a strategic and key role to achieve optimum solution, although he cannot impose his idea or act unilateral. Finally, it can be expected that the final design will reach an appropriate interaction, which is accepted by all involving factors in designing, and also achieve the highest level of adaptation with its contexts. Therefore, interactive architectural approach would be considered as an efficient and practical model to achieve the sustainability in architecture and urban development. Furthermore, interactive architectural approach can be identified as a kind of contextual architecture due to the adaption with all contexts of design. Additionally, interactive architectural approach has a great potential to create the places with sense of belonging.

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