

Use of Cinematic Strategies in Architecture: Designing for Film Students

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Abstract—In the era of globalization, identities and cultures merge due to which all art forms are losing their regional identity and the Indian cinematic world has not been untouched by this identity crisis. Commercialization has become the driving force behind the film learning process and this has adversely affected regional and art cinema of present times. This paper discusses the issues faced by film education in India and some aspects that need to be considered while designing built environment for film students. The selected site for Film and Television Institute lies inside the state-proposed Film City in Mysore district. The study suggests the provision of public and students' interactive spaces that create a platform for exhibition and discussion spaces inside the institute. With the intention of providing a sound environment for audio-visually thinking minds, the functional requirements, spatial and visual character of existing film institutes are studied through a post-occupancy evaluation approach. The conception of design comes by exploring the areas of overlap between cinema and architecture. It draws parallels between the components and techniques of constructing a film and the components and techniques of constructing built environment. These are the qualities and conditions of time, space, movement, and light and sound design techniques used in cinema that can inform architectural designs, methodologies and practices. Nikos Salingaros's theory of visual coherence and scaling hierarchy is studied, based on which a perception and attitude survey is conducted on 44 non-architects and 18 architecture students. The data is analyzed through pie charts and bar graphs and inferences are drawn to understand the relevance of this theory in present context. Cinematic representation techniques of narration are examined and modeled for presenting the preliminary design through 'montage' of images.

1. INTRODUCTION

A film can be best described as an art form which is a comprehensive and holistic composition of all other art forms like music, dance, drama, art and architecture set in its proper time and sequence. Since their inception in late 19th century, the motion pictures have been the most complete medium of transferring ideas, opinions and nation building beliefs to a variety of audiences. Cinematic modes and movements have always been a mirror of technological progress and vice versa. Cinematic world has realized the economic, cultural and social value of film making.

Filmmaking education in India provides diploma and certified courses in directing, cinematography, sound design, art direction and film editing and more recently, areas encompassing digital media. India now has about ten film schools and fifteen to twenty other institutes/departments offering courses in film and video production. Early film-school students learned about cinema and its history in broader terms than simply in relation to the cinema(s) of Mumbai, Chennai and Kolkata. Students were introduced to national cinemas from Europe and Asia among others, and to film movements and "auteurs" from around the world [1]. This education had become a force for students to understand their significance in the prevalent filmmaking system. But there has been a decline in this notion of education and this has given rise to dichotomy between film education and film making. Market value guides education and this compromises with the artistic and ethical value of filmmaking.

If Indian cinema is to grow to adulthood, it has to come out of the cloying, cliché ridden commercial films. Hence it becomes crucial that film education not only evolves with the aspirations of the society but also creates a platform for growth of art and regional cinemas.

The film schools must become a medium that encourages a culture of thinking, questioning and creating that harness the artistic and intellectual potential of each individual. The students need to become an active and empathetic member of society and the three years spent in college must respond to this need. The public also needs to become aware of India's rich cinematic heritage. The architectural solution introduces active and passive public and student interaction activities inside the campus itself.

The tangible forces governing architectural design like functional requirements, spatial planning and context are studied through site visits of existing Film institutions in India. The case studies also throw light on the film making process, the extent and type of interaction required amongst different branches for proper learning and also the placement of activities with respect to each other.

The intangible forces governing architecture are the nature and character of the space. These must ensure that a sound environment is provided for the 'audio-visually' thinking minds. Cinematic techniques are used in architectural design processes with emphasis on time, space and movement that direct both the disciplines. The quality and conditions governing cinematic narrative and built environment are studied through audio and visual concepts of their portrayal. Visual coherence and Scaling Rule theory introduced by Nikos Salingaros gives a holistic design development tool for achieving the visual character of built environment that students can feel connected to.

The aim of this research is to propose a built environment that enriches film education by deriving design methodology and conception through cinematic conception of time, space, movement, light and color and narrative techniques. This brings forth a new design development methodology that can inform the character and quality of built environment. Though the study specially emphasizes on the solutions of building for film students the gist, it becomes important to note that only an architectural solution is not sufficient in improving cinematic expression but evolution must take place in film education and filmmaking processes also.

2. LITERATURE STUDIES

The issue analysis and architectural conception has been separately done by understanding the tangible intangible aspects. The tangible aspects deal with understanding the functional requirements of the institute, study of courses offered and concepts related to spatial planning and volumes. It also discusses how the site context and location help in reinforcing the architectural solution by understanding site potentials. Three case studies undertaken for the same include live site visits to Whistling Woods International, Mumbai, Film and Television Institute of India, Pune and a TV serial set in Film City, Mumbai. The intangible aspects deal with the areas of collisions of cinema and architecture and the audio-visual considerations for designing built environment. The case study of Katana Film Institute in Thailand also helps to understand application of some of the studied theories. A perception attitude survey of some visual concepts help in understanding relevance of those concepts in present times. Following sections discuss the studies undertaken for understanding these aspects.

2.1 Functional Requirements

These areas come under the tangible aspects of architecture. They are well defined studies that help in understanding the built environment of existing institutes. One of the three live case studies include Whistling Woods International, Mumbai, the most sought-after film school in India as well as the world. The film school is well acclaimed in film education and hence this case study becomes crucial for understanding the quality and nature of spaces required for modern film pedagogy.

Located besides Reliance Mediaworks, Film City, Goregaon east, Mumbai; the site lies in the foot hills of national park and is surrounded by dense trees. The site is away from the high traffic and densely inhabited zones of the city, which also renders it a serene environment. Abutting land has been allotted to different production companies for shooting which offers a practical experience environment to the students. The institute accommodates about 800 students and has a site area of 18 acres. Courses are offered in Film making, Communications, Media and Animation. All the blocks have been organized radially around a central courtyard to provide shaded space for outdoor shooting activities, landscaping, students' interaction space, etc. The 4 blocks are: Administration, Academic, Auditorium and studio halls and Recreational block. The four blocks are connected to each other through visual and spatial contrast that also gives them a sort of independence. This contrast has been achieved through differences in shape, material, texture, color and building scale. All blocks are connected to each other through a passage.

Another case study includes a site visit to the temporary set of a Hindi TV serial "Ghullam", which is presently located next to Whistling Woods International, Mumbai. This visit gives an understanding of the activities and spaces required while shooting, the creation of a dummy environment and other services and amenities required in the sets. Some of the observations are the temporary nature of sets, light movable furniture and rotating walls. The need for break out spaces for actors, camera persons and art directors during the shoot also comes from this case study.

The third live case study includes the oldest and most prestigious film institute in India, Film and Television Institute, Pune. Originally established as Prabhat studios by V. Shantaram, the site was sold to government for the first ever film institute of India. Later television department was also shifted from Mandi House, New Delhi to this institute in 1971. It accommodates around 300-400 students and has a site area of 22 acres of land in use, 34 acres for future expansion. The primary circulation is through the central axial road that divides the whole campus into two parts. Separate service road is not provided. The main central road is the only source of pedestrian as well as vehicular movement. All the departments are joined by paved lanes. The major difference between this institute and Whistling Woods International is that the former is a campus while the latter constitutes a single building complex. It is concluded through interviews of FTII faculty and students that segregation of branches into separate building blocks and lack of open interactive spaces between them doesn't respond the collaborative filmmaking efforts made by students and teachers. But human beings have a high level of adaptability and so these students have made their own interactive open spaces around a tree and call them 'Wisdom Tree' and 'Rebel Bench'. These students are highly active, running and organizing for academic projects and informal events. This case study is a very good example of

how the failure of a building occurs when the building is not used for the purpose it is built for. But being a government building, and located in the center of Pune, this Institute offers to students a connection to society, its traditions and cultures which the students need to imbibe in their creation. Years spent in colleges should not cut them away from society, life cycles and day to day experiences as a citizen of the nation.

The afore mentioned case studies throw light on the day to day working of Film Institute and help in formulation of area programme. The functional requirements for various courses (Direction, Art direction, Cinematography, Editing, Sound design, Acting, Animation, etc.) are studied and the necessity of those requirements are analyzed through one on one interviews of the users. Hence a post occupancy evaluation methodology is adopted to understand the pros and cons of existing institutes.

All the above factors give rise to an integrated planning approach which can be achieved through interactive and meditative spaces and also the relation of built environment with open spaces and natural resources available in site.

2.1.1. Site selection

The selected site is in the outskirts of Mysore city. It lies in the industrial area of Immavu village where about 110 hectares of land has been allocated by state government for developing a film city. Since vast land is available near the airport, it was decided to develop a film city in the vicinity of the Mysore-Nanjangud road so that even tourists can visit it without traffic hassles. At present, there is a shortage of film cities and studios in the state. The Karnataka government has realized the need to empower regional cinema so that the state culture and traditions don't get lost in times of globalization and rapid urbanization. Locating the film city in the heritage city of Mysore offers a strong cultural context for growth of regional cinema.

The site for Film Institute has been delineated inside the proposed Film City as it offers a practical learning experience to the students as well as the availability of necessary infrastructure like color labs, media and communication centers, production houses and advertisement teams. The plot for the institute (Figure 1) is selected in the north-eastern corner because of the various viewpoints of hillocks and the presence of a water stream. This region also has a good setback from the proposed main road.

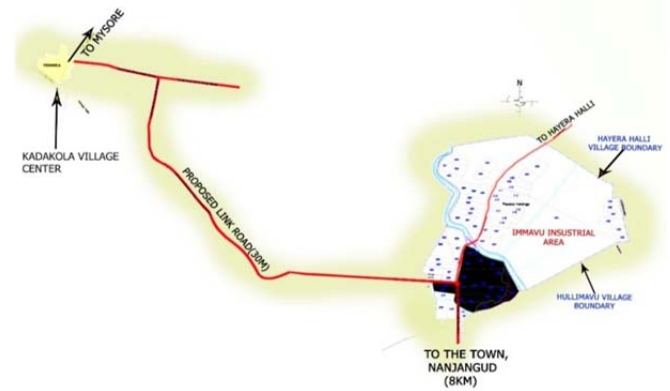


Fig. 1: Delineated region for site highlighted in light green.

2.2 Cinematic Expression in Architecture

This discussion investigates the use of film in architecture by examining with the use of filmmaking techniques in an architectural design project. A study of the relationship between architecture and cinema shows common threads between the two disciplines. Both disciplines manipulate time, space, light, color and sound; in the case of cinema, to reinforce the narrative of a film, and in the case of architecture, to manifest the ideas behind a design [2]. The current use of films and videography in architecture is in 3D visualizations and walk throughs after the building is constructed. But cinema's unique ability to depict both time and space to build a more realistic world than other arts is often overlooked in architectural design [7]. The process of creating a film - the planning, constant revisions during both filming and editing, and critiquing the finished product are quite similar to the design evolution processes in architecture. Therefore, by introducing cinematic techniques into architectural design before the built environment is constructed, it might be possible to better realize the architecture beforehand and allow a larger audience to engage with the proposed architecture. This could give an additional meaning and expression to the spaces built for film students and construct the semantics of the space.

The structure for this study comes by understanding the areas of overlap between Cinema and Architecture.

Both cinema and architecture have a relationship with time, space, light and sound. Both can be analyzed by selective division and isolation of each disciplines' key attributes. Cinema can be broken down into scenes, sequences and frames. Architecture can be divided into spaces, components and details [7]. These comparisons have been briefly discussed in the following sections.

2.2.1. Time, Space and Movement

Time is essential to the making of both cinema and architecture. But its conception and utilization is different for both the disciplines. In cinema, time is an active participant that can be manipulated to attain expanded timeline or a non-

linear chronology. This is coherently shown through flash backs, flash forwards; thus, playing with sequence of scenes to portray a narrative. Architecture's relation to time is more passive. Though time is an inescapable component of anything built [6], in architecture it is the experience of time that matters to a user. A person can walk through spaces along various paths, they can avoid spaces, remain in one place or run through the next [6]. In architecture, users' movement through spaces depend on their needs and instincts in reality, whereas cinema manipulates its user by 'creating a sense of the real'.

Cinema has a high control over time, while architecture being situated in a linear timeline is unable to achieve this control. But it is possible to design a scenario where an occupant is exposed to a different temporality by minimizing architecture's location in time and focusing upon its perception and experience. This can be achieved through temporal and spatial manipulation. Spaces can be flexible and adaptive to the changing needs of the user. Planning itself is a process, Tawa suggests, that should be left relatively undefined referring again to potential. "An architectural plan is not merely a prescription or generator for spatial, geometric and formal configuration," he says. "Conceptually and effectively it is a certain look at organizational opportunity and potential." All spaces could be disconnected or inter connected, thereby disrupting the linearity that compromises with the chronology of movement. This can be done both visually or physically where a space can be seen and not reached through series of spatial layering. Such layering can be achieved through both cinematic and architectural techniques of drawing focus through contrast, sharpness, light and acoustical control, framing and scale. These concepts have been discussed in section 2.2.3. Tawa explains this as the "architecture of potential", as it brings the past, future and present on a common ground of human choices and this can only be achieved if they interact with the space and time through memory and experience. A brilliant example of this is experiencing the spaces of Indian Institute of Management, Bangalore where such visual and physical layering gives a sense of lost time.

2.2.2. Light and Sound

In cinema lighting conditions are used to convey time. In many art house cinemas of 1950s, the reality of background sounds was maintained while the Hollywood cinemas had background musical scores to give pseudo reality. However, unlike cinema, architecture acts as "a receptor, modifier and transmitter of light and sound [6]. Factors influencing lighting and acoustics are room height and distance from openings, position of balconies and room size and location within the complex. But these factors must respond to the character of the space. For example, in public buildings, the roof at the entrance lobby can be high to have an echo of sounds that creates more noise, while as one passes deeper into the building, it can get deeper and clearer through building design

and material selection. The reverberation of a large space impacts upon auditory sense without having to see the size, while the elimination of reverberation gives no information to the occupant about the size or location of the room [2].

Material selection also plays a big role in controlling light and acoustics of a space. Every material can be chosen as per their ability to reflect, absorb or transmit light and sound. Materials like stone and concrete have more mass and rigidity and are good insulators/ isolators of light and sound. Wood has absorptive and reflective acoustical properties and can help achieve a balanced reverberation time. Steel jaalis if used diffuse sound and reflect light, attracting more attention to the space or region.

2.2.3. Visual Coherence in Architecture

Visually coherent environments are those environments that have visual harmony and makes built forms comprehending to the human eye. This imparts a meaningful and perceptive exchange between human beings and built environment. With the basis of geometric order, fractals and information theory, this section gives various approaches to implementation of those concepts in architectural design [5]. Some of the concepts are scaling coherence, material selection, detailing, contrast and structural framing.

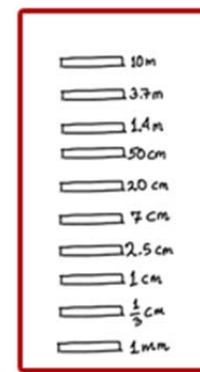


Fig. 2: Scales

An object with *scaling coherence* has differentiations starting from its largest dimension and decreasing by a scaling ratio of approximately $e+2.7$ down to the smallest perceivable scale [5]. When using traditional building materials and methods, the limited strength of materials helps to generate approximately correct subdivisions. Linking two scales can be done through hierarchical cooperation. This linking can be achieved through self-similarity of repeating units, fractals, symmetry, etc. Figure 2 shows the total number of scales in a G+2 structure.

Order on the smallest scale is established by paired contrasting elements, existing in a balanced visual tension. When an eye scans a picture, it looks for regions of contrast to recognize the information available. This contrast is very

important to cause visual stimulus in human beings as it also helps in the evolution of brain. Small scale contrast is achieved through changes in color, texture, material, etc. The brain selects informative details such as, curves, contrasting edges for recognizing or remembering an object [5]. The eye brain evolution is idle in visually homogeneous environments, due to lack of stimuli. Every structure should have at least one region of high contrast, detail and curvature that draws attention.

Plain surfaces, change or scales or material, require either their interior regions or their boundaries to be defined. This ensures that there are no breaks in design and information of one region is transferred to the other through these frames. Framing of doors and windows, the edges of the façade can be done as per the established scales to be used in the proposed structure.

2.2.4. Cinematic Representation of Narration

A commonly used technique of taking the story forward is 'montage sequence', in which a series of short shots are edited into a sequence to condense space, time, and information. This ensures that a long story can be expressed in a short time without compromising with its meaning. Such representations can be used in architectural design evolution and final design presentation stages. Montage of images have been used by Le Corbusier to depict a cinematic idea of linear narrative by the sequence through which the Villa Savoye is shown in photographs. Through a series of photographs of the progression of the viewer through the building, his engagement with a series of spaces is represented. This representation helps to describe the lifestyle of a person that could inhabit such a space [4] and gives life to the mode of presentation. The representation technique has been examined in section 6.

3. OBJECTIVE

The aim of this research is to build a methodology for designing learning environments for film students. The architectural solution intends to provide spaces for empowering regional cinemas and exhibition of short films produced by the students. For this a part of the institute has been let open to public for exhibitions and workshops. The functional requirements have been understood through case studies and interviews while the design conception comes from studying and analyzing the areas of overlap between cinematic techniques of constructing film and architectural techniques of constructing space. The relevance of the study has been understood through cinematic representation of preliminary design which as discussed in Section 6.

The research also involves studying spaces that support idle contemplation as well as engage various levels of user interaction by understanding and incorporating visual coherence as a means of achieving a balanced, authentic and holistic architectural solution. This theory has been examined

by surveying non-architects and architecture students, results of which have been discussed in Section 6. The evolved methodology has been briefly discussed in Section 4.

4. METHODOLOGY

Architecture is directly interlinked with the functional requirements and semantics coupled together with locational determinants of climate, topography, context etc. The aim is to understand these determinants in totality throughout the design process. The following methodology has been adopted.

- a. Understand importance of the subject of concern, identify issues and challenges regarding it through research, case studies.
- b. Study, analyze and understand the functional requirements and spatial organization concerns through site visits of film institutes, and one on one interviews with faculty and students.
- c. Site selection and visit: Collect primary data through questionnaire, photos, master plans, city development plans and city evolution.
- d. Study areas of overlap between cinema and architecture to understand the similarities between the two and form a concept.
- e. Understand relevance of visual coherence theory through survey questionnaire and analyze responses to form inferences.
- f. Examine the use of cinematic narrative techniques and representation of architectural space through montage of images.

5. LIMITATIONS

The research study and proposal is purely an architectural solution that focuses on revival of Indian cinematic expression by providing a platform for growth of regional and art cinemas. It explores and examines the cinematic strategies, conditions and techniques to formulate a methodology for building design. Due to the constraint of time, survey of visual coherence techniques has only completed the preliminary stages and hence, survey methodology needs to be evolved. The paper doesn't suggest changes in film education and film making processes as it is out of the scope of this paper. It also excludes from its ambit financial aspects, and proposal for building services and technical aspects like studio designing.

6. DISCUSSION

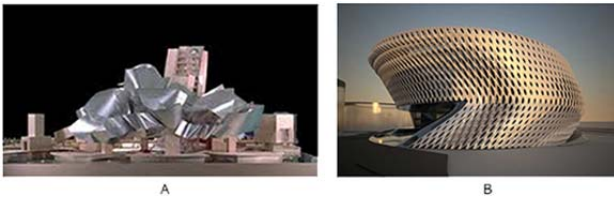
The research is structured to examine both physical and non-physical aspects that govern the evolution of built environment, with emphasis on the needs of film students. The physical aspects that comprise of functional and spatial requirements have been have been understood through case studies as discussed in 2.1. Non-physical aspects have been

discussed in subsequent sections. Some of the studies undertaken have been examined through surveys and representation of proposed spaces through a montage of images in this section.

6.1. Examining theory of Visual Coherence

The theory of visual coherency in architecture reveals that the techniques that can help in achieving them (briefly discussed in 2.2.3) have a strong scientific and mathematical basis. As put forward by Nikos Salingaros, the studies are based on conscious and unconscious reactions of human mind triggered by the visual environment. Hence, the success of a visually coherent environment depends on human perceptions, their attitudes and behavior. The survey consisted of questions based on images of buildings that used the concepts of visual coherency and 44 non-architects belonging to the age group 20-55 responded to the questionnaire. Some of the questions have been discussed as follows.

1) The figures shown below represent two distinct styles of architecture. Which one do you prefer?



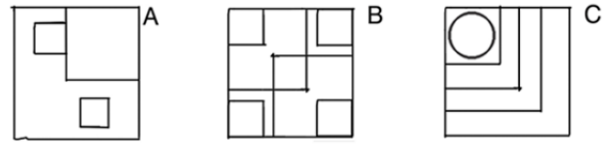
86 % responded in favor of option B even though the option A is the famous Guggenheim museum by Gehry. This shows the importance of visual ordering at small scale in reducing entropy and giving meaningful information through buildings.

2) Which part of the building facade below attracts your first attention?



The intricate steel framing in the right was chosen by 68 % of the respondents proving that regions of high detailing and ornament attract first attention.

3) Which pattern is the most visually appealing?



In the question above, scaling rule and hierarchical linking concepts have been tested. The dilemma of choice lies between options B and C, both having diagonal symmetry but only option B incorporates scaling rule. 57 % responded with 'B' and 43 % with 'C'.

Though the survey methodology gives an idea of human responses to concepts of visual coherence, it has been conducted in a very preliminary phase, due to constraints of time. Also, asking questions based on mere photographs only gives a superficial idea of buildings. Next stages of the study could be based on Post Occupancy Evaluation approach that involves one on one interviews and surveys.

6.2. Design evolution through cinematic methods

A frequently used technique of narration in films is a 'montage sequence'. This technique has been used to show the progression of a person through a space through a series of images. This creates a motion path that gives a better understanding of how the space would be used in future, thus giving the presentation life. Generally, in architecture, spaces are presented through areal views and walkthroughs that are taken from unrealistic angles and viewpoints. This method gives a more realistic representation of space as the camera follows a person through it. It provides a continuous feedback by constantly positioning the architect in his own design and creating a virtual spatial experience. The images in Figure 3 show the progression of a man walking down the corridor to a central interactive semi open space.

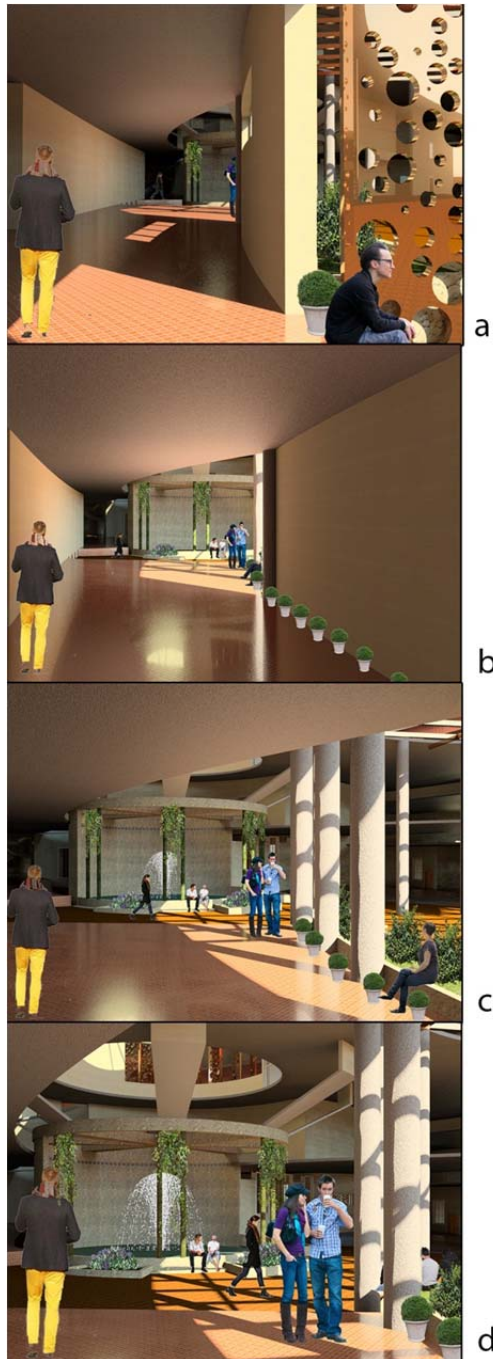


Fig. 3: Using montage technique in representation of built environment.

7. CONCLUSION

This research provided a methodology of studying, analyzing and understanding the physical and non-physical aspects that govern an architectural project. Since the proposal constitutes a learning environment for film students, it was important to understand both the lifestyle of these students and the process of filmmaking. An in-depth study revealed the necessity of

visual and audio stimulation through senses in built environment. For achieving this, cinematic strategies and techniques of constructing a film were studied. The derived methodology was modeled for architectural design and this integration of both the disciplines has shown that another level of detail can be achieved and communicated in an architectural project through the use of cinematic strategies throughout the design process. These strategies can help architects and designers to better understand not only the quality of space they are building but also the lifestyle of users that would inhabit them. The theories of visual coherence and scaling hierarchy should also be incorporated to help users connect to their surroundings.

This research also suggests the necessity of creating public awareness for growth of regional and art cinemas, and how activities like film exhibitions and workshops can help in promoting them.

8. ACKNOWLEDGEMENT

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