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A THESIS

ON

NEWARI CULTURE CENTRE

BY:

074BAE203

ABINA PHOJU

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Department of Architecture
Pulchowk Campus,
Institute of Engineering
Pulchowk, Lalitpur
Nepal

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This is to certify that this thesis entitled "Newari Culture Center" at Ittapako, Bhaktapur submitted by Ms. Abina Phoju has been examined and has been declared successful for the partial fulfillment of the academic requirement for the completion of the Degree of Bachelor of Architecture.

.....

Prof. Dr. Sudha Shrestha

(Thesis Supervisor)

Date: .....

Department of Architecture

Pulchowk Campus,

Institute of Engineering

Pulchowk, Lalitpur

Nepal

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Abina Phoju

074BAE203

Department of Architecture

Pulchowk Campus

ABSTRACT

Newari culture and art center" is envisaged to create a center with a purpose to promote and continue traditional and cultural activities of the area. In the present days, the dynamics of the built environment are very different than those of the past. Too often they lack a sense of continuity and history. To increase the awareness of that past and create a sense of space, it is necessary to recognize, preserve, protect and integrate culture and positive historical elements in advance.

This thesis work is highly influenced by historic, social and architectural context of the Newari culture. Programs have been included to promote the traditional creativity and also to serve to visitors and community. The design evolved through proper assimilation with the setting and promoting creativity through the use of present say designs, technology, and materials: these can be seen through the courtyard and street square concept and the skyline is made up of pitched roofs.

Newari culture and art center deals with activity related to traditional arts like woodcarving, metal craft, pottery, painting-Paubha and traditional Newari music and dance.

In overall, the work is an endeavor to create architecture that will be a contribution to an attempt for 21" century Nepalese architecture, which is rather an elusive goal. It will provide opportunity for the learning and showcasing the local skill and preservation of our traditional art and craft.

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CHAPTER-I: INTRODUCTION

1.1. INTRODUCTION

1.1.1 Background

Culture

Culture is an umbrella term which encompasses the social behavior, institutions, and norms found in human societies, as well as the knowledge, beliefs, arts, laws, customs, capabilities,and habits of the individuals in these groups. Culture is often originated from or attributed to a specific region or location. It differs in languages, religious costumes, dance, music, architecture, food and customs from place to place with the country. It is not the excellence of taste in the fine arts and humanities but also attitudes moral values and customs which is shared by society.

In the words of anthropologist **E.B. Tylor,** it is "that complex whole which includes knowledge, belief, art, morals, law, custom and any other capabilities and habits acquired by man as a member of society." Cultural invention has come to mean any innovation that is new and found to be useful to a group of people and expressed in their behavior but which does not exist as a physical object. Cultures are internally affected by both forces encouraging change and forces resisting change. These forces are related to both social structures and natural events, and are involved in the perpetuation of cultural ideas and practices within current structures, which themselves are subject to change.

Culture In Context of Nepal

Nepal is a country with a diversified cultural and geographical landscape. Our land is rich with various cultural groups like Newar, Tharu, Brahmin, Chhetri, etc. which have their own way of life and culture. Nepali culture is quite hierarchical and there is significant stratification between the poorest and the most powerful of society. People mostly accept these differences in social status as the natural order and defer to those who are older or who they perceive to have a high reputation.

Newari Culture in Nepalese Society

Nepal is a multi-religious, multi-cultural, and multi-linguistic country with roughly 125 ethnic groups and more than 123 languages. Among Nepal's many civilizations, the Newari culture is one of the most distinctive and appealing. Nearly half of the Kathmandu valley's population is Newar, a people with a rich culture and traditions. They primarily live in Kathmandu, Patan, and Bhaktapur inside the valley. Aside from these districts, the Newari caste is also heavily represented in Butwal, Palpa, and Bandipur. To be more specific, the Newars are major contributors to Nepal's rich history, architecture, arts, culture, and business.

Bhaktapur city, rich in ancient arts, religious values, fabulous cultural traditions, architectural masterpieces and ancient sculptures, is also known as an open museum. Moreover, the city is also famous as a city of gods. Bhaktapur has a cluster of temples, pagodas, monuments, courtyard, squares, traditional houses, artistic stones, taps, also

Buddhist shrines and monasteries built in different times of the history. The existing civilization characterized with Newari life style and their fabulous traditions and rituals reflected in the day-to-day activities is the main point of attraction for foreigners visiting this city. Tourists generally notice a marked uniqueness in the festivals, culture events and Newari traditions observed by the people of Bhaktapur.

In Newari culture, various organization have also been established in local, regional and national level for preservation and promotion of culture related activities of various caste groups. *Guthi* is a social organization that is used to maintain the socio-economic order of Nepalese society. The Guthi is a system that has been part of the Newar social system in the Kathmandu Valley since the 5th century BC. Such Guthi is involved in performing different dances, songs, music, festivals and other ritual activities.

1.1.2 Project Introduction

Newari culture is the art full of Newar traditional genius and the group creating such culture should have instinct and ingenuity, and their culture cannot be only a combination of elements from other cultures. Architecture is portrayed of a nation's culture integrated with all aspects of human life. This implies that architecture is assigned to keep the ancient values of culture in itself through architectural expression.

The topic of the thesis is **"Newari Culture Academy"**. It accommodates the study of painting, music, dance, sculpture, craft such as stone work, metal work, woodwork, pottery, feasts and festivals, ritual ceremonies, language, etc. This thesis aims to institutionalize the arts and culture along with scientific research and exploration. This helps to create a center with a purpose to promote and focusing the Newari culture.

1.2 PROJECT JUSTIFICATION

Nepal has a vibrant cultural heritage with a lot of ethnic groups with their architecture, dance forms and art and artifacts. As Bhaktapur is an old Newari settlement town, it is a place where mostly Newari community are residing with their architecture style and a lot of cultural heritage. In the past few decades, Newari culture has gone in ruth condition, with the growth of urbanization, with the influx of new modern equipment and people's craze with the western culture adaptation. Cultural activities like Jatras, Lakhey naach, bhairab naach, etc., and other various folk dances, music and instruments, today are being lost and there is no place to bring them together. Presently festival gathering and cultural performances are carried out in open spaces or community halls; art and cultural objects are kept and displayed in museum. Therefore, these kinds of cultural activities are searching for space to be under same roof.

The Constitution of Nepal in the Preliminary says "a state may, by a state law, determine one or more than one languages of the nation spoken by a majority of people within the state as its official language(s), in addition to the Nepali language". The Kathmandu Metropolitan City (KMC) is planning to set up a separate desk for providing services in

Nepal Bhasa, or Newar language, in addition to Nepali Language according to report in 2017 A.D. Similarly, Kathmandu Metropolitan City (KMC) has announced to implement local curriculum of the Nepal bhasa language from the new academic session in all schools in the KMC in 2020. With this provision, students from grade 1 to 8 in both the institutional and community schools should have to study local textbooks of the Nepal bhasa language. On the other hand, the folk dances and music along with traditional music instruments are taught practiced in separate groups by certain communities only. In most of the places, such practices are gradually declining whereas in some place they are completely declined.

Hence, I would like to conduct my thesis on the topic **"Newari Culture Academy"** to institutionalize the practices of Newari culture and tradition so that people can get a place where they can learn and study about these professionally.

1.3 IMPORTANCE OF RESEARCH

This research will explore different programs or amenities required for the project and will provide optimum areas required for the different programs inside the academy along with the supporting spaces for these programs. Also, it will talk about the optimum orientation of building, its response to ecosystem and climate while integrating the spaces with these elements for creating better learning environment with some glimpse of culture influence.

1.4 PROBLEM STATEMENT

In Newar community, there are different social groups which are involved in different activities such as paintings, music, dance, sculpture, stone craft, metal craft, woodcrafts. pottery etc. These crafts and craftsmanship are vanishing day by day. The skills of such crafts are not transferring to the new generation from senior craftsmen in any medium. So, it is very essential to institutionalize the agencies involved on transformation of skills and knowledge related to arts and culture. The integration of all arts and culture institutions into a single authorized institution as demand of present context is the main target of the proposed project.

In this present era of globalization and localization, there is impact of westernization and modernization everywhere. And traditional culture and rituals are not an exceptional. So, there has been changes; the way we live, behave, celebrate and various other activities. And Newari people are slowly forgetting their culture and traditions. With the growing impact of westernization and modernization, people (especially young generation) are being more attracted to foreign culture and are slowly forgetting their own traditional culture. If this trend continues, then it'll take no time for the disappearance of the traditional practices. Our identity is our culture and all we have now left with us is mere culture. And if we let our culture vanish, then we have nothing left with us. So, it is high time that we all think about it and start preserving and promoting our culture, our identity. So, with the view of transferring the knowledge from seniors to the juniors, an institution involving on transformation of skills and knowledge related to arts and culture is a must to build which is the main purpose of this thesis.

1.5 OBJECTIVES

- To understand culture, its characteristics and its expression in design, along with Newari culture and its ideological elements.
- To preserve literature, language, arts and culture of Newari culture creating a common platform to introduce Newari culture to rest of the world.
- To design aesthetically beautiful building reflecting the Newari architecture to create the dynamic experience for visitors making it one of the important centers of attraction.

1.6 PROPOSED METHODOLOGY

Any research project that is carried out successfully follows a set of techniques that serve as the project's backbone. As a result, a review of the fundamental criteria is required. The following research techniques will be used to obtain the necessary facts, data, and code of conduct, and standards, which will be examined and used to construct a training facility.

1.6.1 Theoretical Understanding and Data Collection

The required information for the project is gathered through the literature review of books, reports, articles, research works and other documents related to the project. In this process, the collected data are studied and analyzed.

1.6.2 Literature Review

The part will comprise guidelines to be considered while designing any built forms. For the purpose necessary questionnaires and interactions needed to be done. For the necessary national and international standards related architectural books of standards to be consulted.

1.6.3 Case Studies

In case study, the spaces required for particular function, spaces interrelationship, functional interrelationship, built spaces and environment, etc. are analyzed, synthesized and evaluated the existing architecture and collected the required data which are then considered in the proposed design project.

The collection of first-hand data is accomplished with studies of various national and international projects that would provide the optimum ground during the designing stage on any projects. Case studies helps to gain ideas on design approaches and concepts which can be applied in our thesis projects.

1.6.4 Design Development

This phase shall include development of conceptual framework, working out with space requirements and detail design development of architectural form and spaces based on the inferences from literature reviews made and case studies carried out.

- Development of conceptual framework.
- Working out with space requirements.

- Detail design development of architectural form and space.
- Final design drawings and final reports with conclusion.

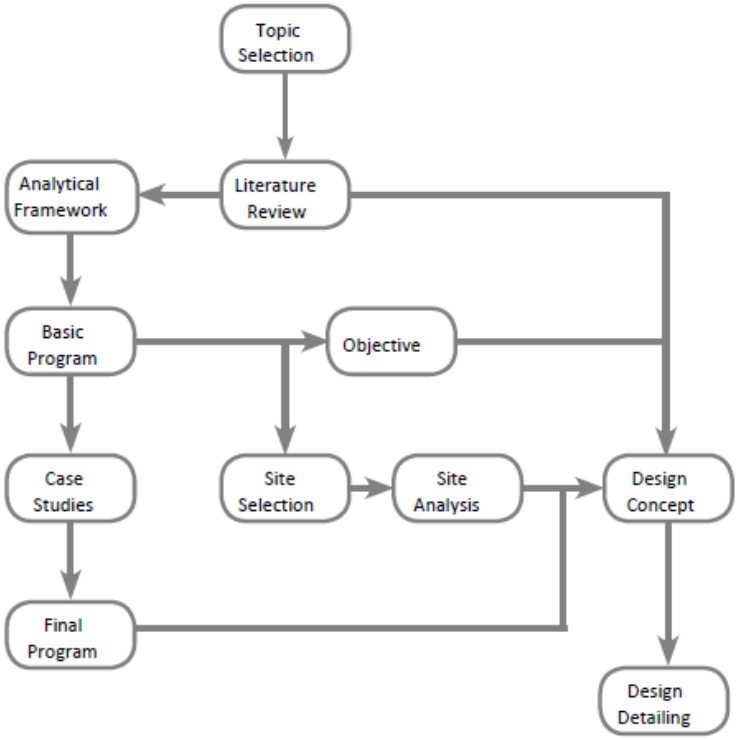


Figure 1 Flow Chart of Proposed Methodology

1.7 EXPECTED OUTPUT

Every input is expected to produce some amount of output. Similarly, some of my expectations from this project are:

- This thesis would provide a space for learning about the music instruments, dance performance, pottery and Newari bhasa and lipi.
- Aims to provide awareness of preservation and promotion of history and cultural of Nepal.
- To generate a holistic idea of city as a space of museum depicting the historical development and achievement of civilization through the lens of art and architecture.
- To develop the idea of modernization into the traditional culture and tradition of Newars.

1.8 TENTATIVE SITE LOCATION

As my thesis is on the topic "**Newari Culture Academy"** related to Newari people of Bhaktapur district, my site will be in Bhaktapur probably on the outskirt of the core area of traditional Newari settlement. The site will be selected after further investigation of the project and knowledge gained.

2 CHAPTER-II: LITERATURE REVIEW

2.1 CULTURE AND CULTURAL CENTER

2.1.1 Culture

'Culture... is that complex whole which includes knowledge, belief, art, morals, law, custom, and any other capabilities and habits acquired by man as a member of society.'- Tyler (British anthropologist) (Spencer Oatey, 2012).

A culture is a way of life of a group of people--the behaviors, beliefs, values, and symbols that they accept, generally without thinking about them, and that are passed along by communication and imitation from one generation to the next. Culture in its broadest sense is cultivated behavior; that is the totality of a person's learned, accumulated experience which is socially transmitted, or more briefly, behavior through social learning. (Cultural Center A cultural platform for interaction at Purbachal, 2015).

2.1.2 Cultural Centre

Cultural Centre is an organization, building or complex that promotes culture and arts. Cultural centers can be neighborhood community arts organizations, private facilities. government-sponsored, or activist-run. Such centers provide and focus for cultural and artistic development in the city and helping to shape and support the cultural identity of the city. Space to produce, create, experiment and innovate; space to rehearse, perform exhibit and preserve; space to interpret, learn, engage and share.

2.1.3 Significance Of Cultural Centre

Cultural centers enrich our society by promoting the arts, history, religion, and heritage of diverse cultures. Communities, municipalities and universities invest in this enrichment by building performing arts centers, museums, worship centers, heritage centers and libraries (structurestx, n.d.). The cultural centers are designed to carry out large-scale cultural activities among the population. At the same time, it plays a dominant role as the main building in rural and urban population centers, as it unites and brings together all segments of the population. The activities in cultural center are one of the ways to assure the decentralization of culture.

It provides conditions for the distribution of ethnic culture and promotion of the old cultural traditions, customs by organizing different entertainment, educational and other events. It creates the forms of contemporary modern art forms and gives sense to them. Cultural center is also responsible to organize the activity of amateur art collectives, studies, and groups and to take care of the employment of children, youth and their artistic education.

2.1.4 The Role of Cultural Center from Today's Perspective

- To create an urban space to celebrate the cultural festivals.
- To preserve the culture and creating an opportunity for people to know about it through exhibitions and performances.
- To encourage people about art, dance, film, music and different creative field.

- To facilitate cultural activities and organize traditional festival and international fair at same place.
- To provide public amenities and represent our culture worldwide.

2.2 NEWARS

2.2.1 Origin of Newars

The *Newars* were the original inhabitants of Kathmandu Valley, which is still the stronghold of the *Newars* in Nepal. But when and where did they first get there? Historians, academics and Newars do not agree upon the origin of the Newars. No one has found enough evidence in support of one theory to convince the others that theirs is the accurate "Explanation".

The Nepali historian *Regmi* offers this description: "One of the most ancient tribes, which have made it famous by a deep, varied and voluminous contribution to the cultural heritage of man, is the semi- civilized *Newar* tribe of Nepal. Very obscure in origin, possessing a peculiar culture mixed with many tribes; crudities, the *Newar* tribe constitute a most complicated problem. The *Newars* form the oldest living group, not only in Nepal, but in the whole of India. The *Newars* have been living in the valley of Kathmandu for centuries: nobody knows when they first settled down.

Newars were the ancient inhabitants and the creators of the historic civilization of the Nepal Valley and their population comprises 1,041,090 which is 0.6 percent of the total population of Nepal. i.c.18.491.092, "The word 'Newar' is etymologically identical with the place name 'Nepal. According to the historian Baburam Acharya the word *Nevar, Neval or Nevah* all have developed form the single word Nepal" (Bal Gopal Shrestha CNAS). Different scholars have different views regarding the origin of Newars. In Nepal the historical research is little known concerning the development of culture and society of Newari.

The *Newar* are not an ethnic group of homogeneous origin. *Lévi (1905: 221)* states that they are said to have come from the north into the Valley with the great Buddhist Bodhisattva Manjusri. *Regmi (1960: 60),* on the other hand, believes that the Kirati, who settled in the Valley around the seventh century BC, were probably the ancestors of at least one group of Newar. *Nepali (1965: 31)* also claims to have discovered South Indian and Austro Asian elements in their descent. *Fürer-Haimendorf (1956: 15)* does not rule out either influence, but in his opinion, there is no evidence that the Newar have not inhabited the Kathmandu Valley since prehistoric times.

Historians supporting the other theory argue that the *Newar language* is of Tibeto-Burman origin, and therefore, the *Newars* must have come from the North. However, the language is also influenced by Sanskrit to a large degree, and the script is closer to Sanskrit than to Tibetan. The debate about the *Newar* origin goes on, but one thing seems to be agreed upon: the *Newar* were the earliest inhabitants of the Kathmandu Valley, and they have

formed and developed an extremely rich and interesting culture over a period of several centuries.

2.2.2 Nepal Bhasa

The Newars speak Nepal Bhasha, a Himalayan language of Tibeto-Burman branch of the Sino-Tibetan group. It has been incorrectly called by the term 'Newari' by westerners and non-Newars of Nepal. From the very beginning of history of Nepal, it has been known as Nepal Bhasha. According to the research findings on this language it is proved that Nepal Bhasha shares the feature of Kirant and Tibetan dialects of Northern Himalayas. The colloquial term used by native speakers is *Newaah Bhaaye*. It consists of five major dialects and several sub-dialects spoken by Newars living throughout the country. It is believed that there are about five hundred Sino-Tibetan Languages in the world. Among them, Nepal Bhasa is the oldest of this language group in South Asia. Also, it is forth in Sino-Tibetan Languages which have old literature extant.

2.2.3 Literature Extant

Historical evidence indicates that many Nepal Bhasa words are found in Lichhivi inscriptions. Hence it has been assumed that the writings on this language was resumed from the early Malla period (9th Century) and it was adopted as the public language of Nepal. In the manuscript of 'Nidan' (901 A.D.) the date has been written in Nepal Bhasa-(*Kwoyeya pwalam mikhaya pwalam sambat nepalaya thuli*). The concluding line of '*Tathagat Guhyak*' manuscript (1104 A.D.) shows *Sidhayeka juro* (*here it ends*). The Guthi documents (1114 A.D.) found in Rudravarna Mahavihar in Lalitpur, also indicates a long description written in Nepalbhasa Hence, from the very beginning of 12th century, Nepal Bhasa was used as independent language of expression. The stone inscriptions found in the courtyard of Vajrayogini Temple of Sankhu (dated 1173 A.D) and copper inscription found in Kasthamandap (dated 1374 A.D.) are the oldest monuments in Nepal Bhasa.

The oldest book (manuscript) in Nepalbhasa found till now is '*Guhya Kali Puja Bidhi*' (1280 AD). Before it was found, '*Haramekhala*' (1374 A.D.), a medicinal book translated from Prakrit language book written by Bengal Poet Madhuk was considered as the oldest nepalbhasa book. The other books found in that period are *Nyayashastra* (1380 A.D.), *Putrapautradibodhini* (1381 A.D.), *Amarakosh* (1386 A.D.) etc. The Gopalraj Vanshavali of 947A.D. (a chronicle) is the first original Nepalbhasa book, from which first sixteen pages have been still missing and pages 17 to 30 (A) uses the Sanskrit language while Nepal Bhasha is used in pages 30(B) to 63.

Dashaphala (1399 A.D.), *Bhasajyotis* (1422 A.D.), *Sumatikarana* (1512 A.D.) and others can be mentioned in astrological book written in Nepalbhasa. '*Dashakarma Paddati*' (1498 A.D.) is the oldest book on rituals written in Nepalbhasa. After '*Bhagwat Puran*' (1505 A.D.), creative literature in Nepalbhasa starts from '*Tantrakhyan*' (1518 A.D.)

2.2.4 Nepal Sambat (Era)

Nepal is rich in its own culture. Malla period was of great importance for the cultural, social & religious development of *Nepala Mandala* (the valley). There is now a tendency to consider this period of history as golden age of Nepal. In this very period Kantipur, Bhaktapur and Lalitpur developed incomparable splendor.

Nepal's original Era *Nepal Sambat* was begun by *Sankhadhar Sakhwah*, in Malla period, when *Raghab Dev* was ruling in *Kantipur* and *Anand Malla* in Bhaktapur. It was started from 20th of October 879 Thursday. It is lunar calendar and it begins with the day of new moon of Kartik *(Kachhala).* Till now, whatever the festivals the Nepalese people celebrate such as *Dashain, Tihar, Chatte Dashain, Teej, Shivaratri, Gaijatra, Chhath* etc, are according to lunar calendar of Nepal Era (except very few). Nepal Era was official era of Nepal in Malla period and Bikram Era was brought in official use in only in Rana period by Chandra Shamsher

There are 12 months (and 13 in every three years) according to this calendar. New month starts from the day after new moon day i.e., *Paru* (*Pratipada*). From *Paru* to full moon day, it is called *'Tho'* then up to new moon day, it is called *'Gaa'* So, a month is divided into 2 parts *'Tho'* and *'Gaa'* such as *Kachhala Tho, Kachhala Gaa* and so on. (*Towards an Easy-to-Use Nepal Sambat Calendar – Subhash Ram Prajapati, Ph.D.*)

Table 1 Nepal Sambat Calendar

S. N	Month (Nepal Era)	Christian Era	Bikram Era
1.	Kachhala (Tho/ Ga)	November	Kartik / Mangsir
2.	Thinla (Tho/ Ga)	December	Mangsir / Poush
3.	Pohela (Tho/ Ga)	January	Poush / Magh
4.	Silla (Tho/ Ga)	February	Magh / Falgun
5.	Chilla (Tho/ Ga)	March	Falgun / Chaitra
6.	Chaula (Tho/ Ga)	April	Chaitra / Baishakh
7.	Bachhala (Tho/ Ga)	May	Baishakh / Jestha
8.	Tachhala (Tho/ Ga)	June	Jestha / Ashar
9.	Dilla (Tho/ Ga)	July	Ashar / Shrawan
10.	Gunla (Tho/ Ga)	August	Shrawan / Bhadra
11.	Yanla (Tho/ Ga)	September	Bhadra / Ashwin
12.	Kaula (Tho/ Ga)	October	Ashwin / Kartik

2.2.5 Religion

From the religious point of view the majority of Newars follow Hinduism or Buddhism. There are also some Muslim and Christian Newars in Nepal. "Muslim Newars have long been living in Kathmandu and some speak in Newar language. The Christian Newar were forced in exile to India as soon as the Gorkha King Prithivi Narayan Shah conquered Nepal in 1769" (Bal Gopal Shrestha CNAS). According to the 2001 Nepal Census, 84.13% of the Newars were Hindu and 15.31% were Buddhist, but most of the Newars practice both Hinduism and Buddhism. Religiously, the Newars can be classified as both Hindu and Buddhist. The major cults are Vajrayana Buddhism and Tantric Hinduism.

Newars form an ethno-linguistic community distinct from all the other ethnic groups of Nepal. Newars are divided into various endogamous clans or groups on the basis of their ancient hereditary occupations, deriving its roots in the classic late-Vedic Varna model. Although first introduced in the time of the Lichchhavi, the Newar caste system assumed its present shape during the medieval Malla period. Shahkya, Barjracharya become priest

by birth. Then Pradhan, Joshi, Rajbhandari etc. who used to be recruited for governmental services and as the advisors to the king. The farmers, articians' and craftsmen belong to worker's class. There are untouchables who are supposedly the cleaners and butchers. The whole social structure of Newar is built on this caste system.

2.2.6 Newari Organization (Guthi)

Origin of Guthi

Origin: The term 'Guthi' was derived from the Sanskrit word 'Gosthi'. In the hoary past the gathering of gopalas cow-herders (Sapu) was called Gosthi (meeting of cow-herders). Later, the term Gosthi was used to mean a gathering of people with a particular objective. The term still extended to mean group, conference, or meeting. In Newar vocabulary Gosthi, meant Sigu, Sanagu, Achaju guthis etc.

This term was first mentioned in an inscription found at Pashupati dated Nepal Samvat 523 (1403 A.D). The term was also inscribed in an inscription found at Lembati, Lalitpur, dated Nepal Samvat 526 (1406 A.D). This inscription belonged to the time of Shivadeva and Amsuvarma. The term Gosthi includes Guthiyar (partner to a share). This term been interpreted in various ways in various times. The term Gosthi was used in Lhasa in Tibet where Newars had their own Guthis. The Guthi was created with a view to accomplishing a work, not by an individual, but by a group of persons collectively who shared a common goal. Therefore, the history of Guthi was as old as the history of civilization.

Shakyamuni Gautam Buddha established Sangha. He also made rules and regulations to regulate the Sangha. Those rules and regulations were later called Vinayapitaka for the Buddhists. The knowledge of Sangha preceded that of Guthi.

Composition of the Guthi

In order to run a Guthi smoothly, special assignments or responsibilities are given to guthiyars. Thakali is the senior most person of the Guthi. Thakali gives instruction to conduct the Guthi activities and the instruction of the Thakali is carried by the guthiyars. In some Guthis there are five Thakalis. They are called Noke, Soku and the like. The guthiyar who takes the turn of a Guthi is called Pala. The guthiyar who takes the turn next time is called Bharin. The guthiyar who has already taken the turn is called Sulin. The Guthi Pala makes all the necessary arrangement. All those who are entitled to enter the Guthi are guthiyars. The guthiyar is normally the head of the household in most of the Guthis. In Achaju Guthi, all those who have undergone bare chuyegu (initiation into monkhood) are guthiyars. In Digu puja Guthi though females and children are allowed to take part, it is only the head of the household who becomes the guthiyar. Even though Guruju (priest) who does the work of worship. Bhalya who carries the ku (two pairs of bamboo baskets joined by a stick and carried on human shoulders) and Twajan who plays Mwahali (a kind of musical instrument) they are not guthiyars.

Therefore, while talking about the composition of Guthis prevalent in Nepal, we come to know that Guthis have various structures.

Some Guthis have their codes or rules of conduct or discipline to be observed by guthiyars in a written form. But most of the Guthis do not have the codes in writing. Even then, the Guthis function in accordance with general rules and policies of conduct prevailing since the ancient times. Guthiyars have equal rights in Guthis. As Thakali is the leader of the guthi, guthiyars must carry on the instruction of the Thakali. Nobody should do anything that is detrimental to the guthi. If one does so, he must pay ban (a fine). One who does any work detrimental to the guthi may be expelled from membership of the Guthi.

Present Status of Guthis of the Kathmandu Valley

After the introduction of democracy in Nepal, the people of the Kathmandu Valley became more conscious. Education was provided to girls also. Farming was not only the source of income and livelihood. Employment and trade were followed as sources of income. Nepal was exposed to the world. The people of the world came to Nepal and the Nepalese went out of Nepal to foreign lands. Nepal became a part and parcel of the triumphant development in field of education, health, communication and science and technology. The Nepalese youths were increasingly attracted to new trends of thought and development than to traditional culture and civilization. This may be the reason why they are not much interested in the traditional Guthi culture. They are seeking way out of the traditional Newar culture by opening new organizations and clubs.

On the one hand, the income of the Guthi is declining, on the other, the people have switched on to new social organizations for their livelihood. Thus, the present status of Guthis is degrading. If we can make the youths acquainted with the importance of our traditional culture, religion, and the Newars indigenous culture latent in Guthis in time, the old tradition may survive.

2.3 ARTS

As one could perhaps expect, a country with such a colorful and varied history as Nepal has an equally interesting and developed arts and culture. In the fields of architecture, sculpture and painting, for example. Nepal's arts and culture dates back to several thousand years, firming a foundation on which subsequent generations have built.

2.3.1 Music

The Newars are very much rich in traditional, classical and folk music as in dances. Various music and dance events take place in different parts of Newar societies on the occasion of different festivals. In fact, the Newars are so duly intermixed with music and dances that not a single festival, feast or ceremony, 'from womb to tomb', passes without a music or music and dances. Various songs, musical instruments and dances are connected with various religious, social and cultural life of the Newars. Different musical instruments are in practice in the festival, feasts, ceremonies and also in funeral procession.

Musical Instruments

It is believed that there are about 200 types of original musical instruments in Nepal, and 108 of musical instruments have been found till now. A great number of Newar musical

instruments are included in it. These instruments can be classified into four classes according to Sangeet Shastra.

1. **Membranophones** - Dhimay, Dhah, Paschima, NayaKhin etc.
2. **Idiophones** - Bhusyah, Chhusyah, TainNain etc.
3. **Chordophones** - Piwancha
4. **Aerophones** - Muhali, Nekoo, Bansuri etc.

Mostly used musical instruments in Newar societies are membranophones, which are generally accompanied with idiophones and aerophones (Gainju,2016).

1. Membranophones

A **membranophone** is any musical instrument which produces sound primarily by way of a vibrating stretched membrane by striking, rubbing, or singing. It is one of the four main divisions of instruments in the original Hornbostel-Sachs scheme of classification.

Dhimay

Dhimay is the most common musical instruments amongst the Newars. It is considered as the oldest musical instruments amongst the membranophones. Even though there is no evidence that Mahadeva invented this instrument (as legend says) but there is evidence to support that it dates back to *Kirat* period. It resembles the *Chyabrung* of *Kirat* Rais and *Dhola* of *Tharus*. *Dhimay* is played in almost all ceremonial marches by the *Jyapus*. They are fund lost in dancing with deep rumble of *Dhimay* in festivals.

Figure 2 Dhimacha
Source: (Gainju,2016)

Dhah

Gunla (a month according to Nepal Era) is taken as Buddhist holy month. As *Dhah* is played during *Gunla* it is also termed as *'Gunla Bajan'*. It looks similar to *Dhimay* but is slightly smaller than *Dhimay*. *Dhah* is constructed from cylindrical hollowed tree trunk slightly smaller than that of *Dhimay*. Tuning paste is stuck at the inner side of *Mankah*. Tuning paste is made of castor seeds, mustard oils etc.

Figure 3 Dhah
Source: (Gainju,2016)

Koncha Khin

Koncha Khin is single headed drum resembling *Tabla*. It is also termed as '*Khicha Khwah Khin*' as it is said that dogs start to cry when *Koncha Khin* is played. *Koncha Khin* is mainly played in marriage processions and accompanied with *baboo, Tah* and *Baya* or *Muhali*.

Pastah Khin

Also known as *Kwatah Khin*, *Pasta Khin* is a combination of *Dapha Khin* and *NayaKhin*. An ancient stone image of people playing *Pastah Khin* signifies its use since ancient time.

Pastah Khin is an important instrument in *Bajrayan* sect of Buddhism. *Pastah Khin* is accompanied with *Ponga* and *Tah*.

Paschima

Myth says, *Paschima* was invented by lord Krishna. This instrument is also known as *Mridanga*. It is a double headed drum with tuning paste in on hide (*Nasah*) and dough made of wheat flour is plastered in the other hide (*Mankah*) before playing. *Paschima* is accompanied with *Baboocha* (thinner cymbals), *Tah* (thicker cymbal), *Muhali* (shwam) or *Bansuri* (flute).

Nayakhin

It is another musical instrument used in many rituals. This instrument is mainly played by the Khadgis, however, this instrument is also played by other castes. It is also called as '*NayaKhin*' or *'Dyah Khin'*. Since it is also played in funeral processions it is also known as *'Seeh Bajan*' (funeral drum). Long ago, there was a tradition to play fanfare on *NayaKhin* to proclaim the news.

DapaKhin

DapaKhin has various names: *Yakah Khin*, *Joh khin*, *Lala Khin*, *Deshi Khin*, for instance. It is double headed drum with tuning paste in both hides. *Dapa Khin* is mainly played in *Dapa Bhajans* (traditional hymns). If a single Khin is played it is called *Yakah Khin* and if two Khins are played, they are called as *'Joh Khin'*. *DapaKhin* is accompanied with *Tah*, *Baboo* and *Bansuri* (flute) or *Muhali* (Shwam).

Nagara

Nagara is a kettle drum played with two sticks. This instrument has been described in *purans* as *Dundubhi, Dundhu, Dundhub, Bheri, Adamber* etc. It is often played in pair, known as *Joh Nagara*. *Nagara* is also played in Panchai Baja as *Damaha*. It is too played in Mahakali Dance. It is accompanied with *Chhusyah* and *Muhali*.

Figure 4 Nagara
Source: (Gainju,2016)

KantanDabDab

Also known as *Damaru*, it is a small two headed drum with straps. It is the instrument played by lord Shiva. *KantanDabDab* is especially played during *Mohani* Festival.

Daha

Daha or a tambourine is a percussion instrument played in *Bansuri Bajan* or *Khin Bajan*. It is also used whilst singing songs and in Bhajans.

Magah Khin

These two headed drum with tuning paste at both ends belongs to Magar community, however it has become an important part in Newar folk music. It is said that there are fifty-four talas of *Magah Khin*. It is commonly known as *Madal*.

Dholak

Figure 5 Dholak

Dholak resembles *Dhah* in structure and its playing techniques are similar to that of *Paschima*. *Dhola*k is played in *Dhalcha Bhajans* and also accompanies *Bansuri*.

Dhyangro

Though it is not a Newar instrument it has become an integral part in many rituals. *Dhyangro* is basically played by *Jhankris* (Witch Doctors) or *Kirats*.

2. Idiophones

Idiophones are instruments that create sound through vibrating themselves. They differ from chordophones and membranophones because the vibrating is not the result of strings or membranes.

Tah

The word '*Tah*' comes from '*Tala*' which is derived from '*Tandava*' and '*Lasya*'. *Tah* controls *Tandava* and *Lasya* of Music. It controls whole rhythm of music. *Tah* is considered as the principle musical instruments among all Newar musical instruments. *Tah*, a pair of thicker cymbals, is made of *Asta Dhatu* (an alloy of eight holy metals). It accompanies *Dhah*, *Dapha Khin*, *Paschima*, *Koncha Khin*, *Naya Khin* and others.

Baboocha

It is thinner than *Tah*, however, it is bigger in size. It is also made of *Asta Dhatu*. It accompanies *Dapha Khin, Pachima, Koncha Khin, Dholak* and others.

Bhusyah

Bhusyah is a large pair of cymbals that accompanies mainly *dhimay* and *dhah*. This cymbal is thinner in compare to *Tah* and *Baboocha*.

Chhusyah

Also known as *Sichhya*, *Chhusyah* resembles *Baboocha* but is bigger in size. It accompanies *Naya Khin, Nagara* and others.

Tain-Nain

TainNain is a gong, it is played by striking with a stick. It accompanies *Dhimay*.

Tini-Muni

It is a percussion instrument consisting of a steel rod bent in the shape rod a triangle. It is played by striking with another steel rod. It is played in *Dhalcha Bhajans*.

Gan

Gan or a bell play a vital role in ceremonial worships such as *Shradh, Janko, Ihi* and so on. There are various types of bells in practice: Big, Small, Wind bell, Bajra Ghanta, for instance.

3. Chordophones

The Hornbostel-Sachs system of musical instrument classification defines chordophones as all instruments in which sound is primarily produced by the vibration of a string or strings that are stretched between fixed points.

Piwancha

Piwancha is two or three stringed instruments. It is especially played by *Jyapu* (Newar farmer) s. The two strings of *Piwancha* produce C and G notes. Unfortunately, it has been extinct.

4. Aerophones

Aerophones are instruments that create noise by pushing vibrating columns of air through them.

Muhali

Muhali is a conical bore shawm, which is played only by *Jugi (Kusle)* caste. *Jugis* are given *Khanki* (land) for playing *Muhali* in various occasions. There is a tradition to play *Muhali* everyday in *Phalchas*, i.e., roofed rest places, which tradition is also known as *Siwa Yayegu*. *Muhali* accompanies *Dhah, Dapha Khin, Paschima, Nagara* and others. *Muhali* solo is played in *Digu Puja.*

Bansuri (Flute)

Bansuri is a woodwind instrument which accompanies mainly *Paschima, Dapha Khin* or *Koncha Khin*. *Basuri* is of three kinds: *Ghor, Majhawala* and *Teep*, producing low, middle and high tones.

Figure 6 Basuri

Source: (Gainju,2016)

Baya

Baya resembles *Bansuri* but they are different in construction and playing techniques. *Baya* accompanies mainly *Koncha Khin*. *Koncha Khin* and *Baya* are played in marriage procession.

Ponga

Also known as *Payantah*, *Ponga* is a long wind instrument made of brass. *Pongas* are made by *Tamoh* or *Tamrakar* (Newar Coppersmith). It accompanies *Kwatah Khin* and it is also played in *Bhailah Pyakhan* (Bhairab Dance).

Kaha

Kaha resembles *Ponga*. It is also known as Indra Baja and it is believed to be invented at the time of *Manju Shree*. It is played with *Naya Khin* in many festivals and also played in funeral processions. There is a typical caste, called *Kabuja*, who play *Kaha*.

Nekoo

Nekoo or horn instrument is the oldest form of musical instruments in the globe. It is played during *Gunla* month. There are various types of *Nekoo, Chatti Nekoo*, *Thika Nekoo*, for instance.

Sankha

Sankha or *konch* is an ancient instrument. Playing of Sankha indicates starting of any new work. *Sankha* is played in 'MahGhah *Wonegu*' in Dec-Jan month. It is also played in different worships.

2.3.2 Folk Songs

The traditional *Newar* music have been arranged into a particular schedule. One of the dominant forms of traditional *Newar* music is '*Dapha*'. *Dapha* music is a classical *Newar* music that probably originated during late *'Lichhavi Period'* and flourished in the *'Malla Period'*. Basically, the songs of *Dapha* music are devotional songs based on classical ragas. Dapha music is played by bands known as *'Dapha Khalah'* that may be associated with a traditional group called *'Guthi'*. According to the ragas certain songs are played at certain season or time of day. The songs generally narrate or depict the mood of the particular season. Besides the seasonal and scheduled ragas, various ragas are played during specific events, such as *Deepak raga* (played when a monarch passes away).

Table 2 Seasons, their Festivals and Music (Gainju,2016)

Season	Festival	Song	Comments
Grishma (Summer)	Sitinakha to Gathamuga Chare	Sinjya	Played during plantation
Barsha (Monsoon)	Gathamuga Chare to Yanla Punhi	Tukajya, Silu mye	Sad songs, while moving to Gosainkunda
Sharad (Autumn)	Dashain (Mohanee)	Malshree	Incorporated into mainstream Nepalese music of Dashain
Hemant (Winter)	-	-	-
Shishir	Fagu Purnima (Holi)	Holi mye	Played during Fagu Purnima
Basanta	Shree Panchami to Buddha Jayanti	Basanta	Played to Head of state of Nepal in Nasalchowk on Vasant Panchami

2.3.3 Dance

The Newars are very much rich in traditional, classical and folk music as in dances. Various music and dance events take place in different parts of Newar societies on the occasion of different festivals. There are many mask dances, folk dances and classical dances the Newars perform. A number of mask dances are also performed once in every twelve years (Gainju,2016). In general, these all types of dances can be classified into three categories:

1. **Masked Dances** - Mahakali Dance, Bhairab Dance, Sikali Dance, Various Gan Pyakhan etc.
2. **Folk Dances** - Jyapu Dance, Ghintanmuni etc.
3. **Charya Dances** - ManjuShree, Arjya Tara, Sodasa Lasya etc.

1. Masked Dances

Figure 7 Nava Durga Dance
Source: nepal-heritage-nature-and-festival-tour

Nava Durga dance

A tantric mask dance in honor of the nine manifestations of *Durga* is performed in Bhaktapur in October every year. *Nava Durga* means nine *Durgas* composed of *Mahakali, Kumari, Barahi, Brahamayani, Mahesvari, Vaishnavi, Indrani, Mahalakshmi,* and *Tripurasundari*. *Durgas* are the various demonic representation or manifestation of *Parvati*, the *Sakti* of *Shiva*, in the tantric tradition. In Bhaktapur, *Nava Durga* is a set of masks with a ritual continual life force which begins from *Dashain* in October and ends in *Bhagasti* in June. Though there are 9 *Durgas*, only seven, *Mahakali, Kumari, Barahi, Brahmayani, Mahesvari, Indrani* and *Vaishnavi* are represented in the mask-dance and her icon is kept in *Nava Durga* god-house at *Gachhe* tole. *Mahalakshmi*, i.e., *Shifo-dyo* is also not present there in the form of a mask. She is always in a small chariot that is kept on the ground during the public performances of *Nava Durga* leading its masked procession.

The *Nava Durga* dance proceeds according to the beatings of *Dyokhin* and the performances of *Taa* (a pair of thick, small cymbals) and *Kanhe-Baja*. The *dyokhin, taa*, and *kanhe-Baja* have symbolic meaning. It is said that the ringing sound of the musical instruments of *Nava Durga* dance not only gives the rhythmic signals to the dancers but also removes the people's troubles and obstacles caused by evil beings. The tantric version is that it gives peace, prosperity, and happiness to the people. For this purpose, this dance is performed in every tole of Bhaktapur.

Mahakali Dance

This is one of the most popular masked dances of the *Newar*. It is based on the religious story from a Hindu Puran Called *'Mahakali Mahalaxmi'*. According to this, the three goddess *Mahakali, Mahalaxmi*, and *Kumari* (three of the eight deities that protect the eight directions of Kathmandu Valley and have different ghost followers. These mother goddesses were practiced by Eighty-four *Siddhas* to gain mystic power.) came down to heaven to vanquish the demons that spread great misery and hardship among human beings. So, the almighty Goddesses waged a great war with the demons and defeated them, thus stabilizing peace and order on earth. This dance shows great joy and happiness after the great victory over the demons.

Bhairav Dance

Among many masks dances the Bhairav Pyakhan or *Bhairav Dance* is the most popular one. Almost all of the traditional dances follow some kind of legend and traditional beliefs

and the same with the *Bhairav Pyakhan*. In this dance, ten goddesses played as the main members where *Bhairav* is the main star and it is regarded as the powerful god among them.

Figure 10 Mahakali Dance

Figure 8 Bhairav Dance

Figure 9 Lakhey Dance

Source: traditional-newari-dances

Lakhey dance

This is one of the classical dances of Nepal. Once a year during the festival of *Indra Jatra* which is celebrated for nearly a week at the end of September or the first part of October. Almost all the settlements of *Newar* have *Lakhey* dance at least once a year.

According to people's belief, *Lakhey* is man-eating (mainly children) demons living in the dense forest. They hunt animals and people passing through the jungle. Whenever they have a good meal, they dance with a jog. Previously *Lakhey* dancers used to select victims for human blood sacrifices.

Monkey dance

It is performed by teenagers wearing traditional customs and sticks in their hands. The Nepalese still pay great respect to the sacred myths and legends. According to the religious epic *Ramayan,* the dance was performed by the monkeys to express their joy and happiness to their Lord Ram and his wife Sita after their victory over the demon king Ravan of Sri Lanka.

Khyak Dance

Khyaks are supernatural beings. They are believed to be followers of gods and goddesses. They were visible to the people before electricity arrived. They are quite harmless. They simply used to frighten people at night. What the dancers perform is just the expression of *Khyak's* naughty nature. They perform dances to entertain God and Goddesses.

Figure 11 Khyak Dance

Source: traditional-newari-dances

Kawan (Skeleton) Dance

According to people's belief, *Kawans* are the evil spirits to be seen mostly at street-crossing and cremation-grounds. They accompany the Gods and Goddess during their adventures.

Sometimes they trouble people, causing stomach pain. But one can get rid of it easily by making some offerings, following the advice of a witch doctor.

Devi Daitya Sangram (The battle of Goddess and Demon)

This is a dramatic dance form, here the handsome brave demon sees a beautiful girl and immediately falls in love with her. Then he proposes to marry her, but she answers that she will only accept one who can defeat her in a battle. The egoist demon gets very angry and tries to catch her. But it is not possible. They start battling. The demon sees her everywhere as the furious. Goddess *Kali* and collapses on the ground with fear. Then the goddess, one who is the universal power stands on him.

Neel Barahi (Bode)

Neel Barahi Pyakhan is a sacred masked dance that is shown over four days (August/September) in different parts of Bode. Nineteen persons representing the town's guardian pantheon take part in the dance performance. Music is provided by a 27-piece traditional orchestra. The ceremony invokes peace and harmony and is dedicated to the deity *Neel Barahi* whose temple is located in a jungle outside Bode.

Figure 12 Neel Barahi Dance
Source: traditional-newari-dances

2. Folk Dances

Aarati Dance

It is the process of worship by offering oil lamps to the deities. Usually, it is a process used for Gods and Goddesses and holy beings. As our culture considers guests to be a form of God and Goddesses, we present this dance constituting the *Aarati* in which Newari girls in their traditional attires will present it in the hope the peace and prosperity may shine down on us.

Jyapu-Jyapuni Dance

"Jyapu" is the word used to address males of the Newari farmer's community and *"Jyapuni"* to address females. This dance depicts the legendary love story of a *Jyapu* and a J*yapuni* whose story is as popular and touching as the story Romeo and Juliet.

Dhimay Pyakhan

Newar's celebrated every significant moment with great vigor. Whenever there is something to celebrate and enjoy, they gather and start dancing to the beats of the traditional drum, *Dhimay*. This farmer's pair dance is generally performed during the harvest season in their community get together along with living music and songs.

Indra Apsara (Nymph) Dance

In *Veda*, *Indra* is a divine supreme Hero of the Universe, king of gods, who dances with *Nymphs* in the Heaven. This event as a memory for the local people of Thimi (Madhyapur) as if dead family members are watching this performance in Heaven. The dresses of the dancers are influenced by the customs of Rana Minister's period. This Dance is in medieval style.

Lusi (Pestle) Dance

This is the satirical street performance of social and political life, both on the local and international levels. However, the style of choreography and music are always the same, only the story will be different according to time and space.

Ghintang Gisi (Stick) Dance

One of the traditional dances of Bhaktapur is Ghintang Gisi Dance. It is performed during the festival of Gai Jatra. During this festival, the rhythm is followed i.e., *ghinee twang-ghinee twang ghintang gisi twang.*

3. Charya Dances

Manjushree

Manjushree, believed to have come from *Mahachin*, holds a special place in Nepalese culture as a *Bodhisatwa* who made Kathmandu Valley inhabitable by draining the water out of it. Long ago, the Kathmandu valley was a lake. *Manjushree* with his two consorts *Barada* and *Mokshada* came to Kathmandu to pay homage to Lord *Swoyambhu*.

Bajrayogini

Bajrayogini, the goddess of yogic practices dances joyfully in bright red color. She is the consort of *Heruka* and personifies the feminine energy. The temple of Goddess *Bajrayogini* is situated 3 miles from Kathmandu.

Pancha Buddha

The *Pancha Buddha* or Five Buddhas are *Vairochana, Akshobhya, Ratnasambhava, Amitabha Buddhas* and *Amoghasiddhi*. Each of these transcendental Buddhas has his particular color, posture, direction and wisdom.

Rakta Ganesh

The image of *Rakta Ganesh* (Red Ganesh) is generally found along with *Mahakala* at the entrance to monasteries in the valley as a protective deity. He is elephant headed and has three eyes.

Arya Tara

She is of green color and regarded as a consort of *Amoghasiddhi*. She protects the suffering beings in crossing the ocean of Samsara, of this life of suffering.

Table 3 Traditional Dances of Bhaktapur and Thimi (Bode and Nagadesha) (Gainju,2016)

Bhaktapur	Thimi	Bode
➢ Mahakali Dance ➢ Lakhey Dance ➢ Monkey Dance ➢ Khyak Dance ➢ Kawan (Skeleton)Dance ➢ Devi Daitya Sangram ➢ Nava Durga Dance ➢ Bhairav Dance ➢ Ghintanghisi dance	➢ Mahakali Dance ➢ Lakhey Dance ➢ Monkey Dance ➢ Khyak Dance ➢ Kawan Dance ➢ Devi Daitya Sangram **Folk Dances** ➢ Jyapu- Jyapuni Dance ➢ Indra Apsara Dance ➢ Lusi Dance **Charya Dances** ➢ Manjushree Dance ➢ Bajrayogini Dance ➢ Pancha Buddha Dance ➢ Rakta Ganesh Dance ➢ Arya Tara Dance	➢ Mahakali Dance (Nagadesha) ➢ Neel-Barahi Dance (Bode)

2.3.4 Painting

Looking briefly at the history of Nepalese painting, it appears that ancient icons and religious paintings entered the valley during the *Lichchhavi* period. *Lichchhavi* inscriptions dating from the mid-fifth century A.D. inform us that traders, monks and Brahmans, as well as artists from neighboring areas visited the Kathmandu Valley from time to time. They probably brought religious icons and paintings with them which could have served as models for local artists. The Chinese traveler, *Wang Hsuan Tse*, who came to Nepal in the seventh century A.D., described quite eloquently the houses in the Valley which even at that time were embellished with sculptures and paintings.

Although there are no surviving examples of paintings from the *Lichchhavi* period (c. 400-750 A.D.), it can be surmised that the murals or wall-paintings noticed by the Chinese traveler, were probably like those that adorn monasteries, temples and houses today. Since the sculpture radiation of Nepal during the early centuries of the Christian era was so vital and creative, there seems no reason to believe that the tradition of painting was not equally sophisticated.

Figure 13 Traditional Painting
Source: culturenepal

Ancient Paintings

The earliest examples of Nepalese painting are in the form of manuscript illustrations on palm leaves. When the first surviving paintings are examined, it becomes quite clear that they are the result of a long and well-developed pictorial tradition. The antiquity of

Nepalese manuscripts goes back to the ninth century: however, not all early manuscripts were illustrated. The earliest known example of an illustrated manuscript is the *Astasahasrika Prainaparamita* dated 1015 A.D. These manuscripts invariably consist of narrow folios of palm leaves about thirty centimeters long, depending on text, but not wider than five centimeters. The manuscripts are perforated in two places, loosely held together with string and protected by wooden covers on both sides. These wooden covers, a large number of which have fortunately survived, are more lavishly painted than the manuscripts themselves. In palm leaf manuscript, the scribe leaves spaces for illustrations which the artists later paint with figures of divinities.

Influence of Religion on Paintings

All surviving illustrated manuscripts whether Buddhist or Hindu, are illustrated with hieratic images of gods and goddesses. A large number of manuscripts are devoted to the principal events from the life of Buddha or the hieratic representations of *Ajrayana* deities which bear little relation to the text. During the early medieval period, *Prainaparamita*, the personification of wisdom, became one of the most popular deities in Nepal.

Manuscripts consecrated to this deity were repeatedly copied. Besides these Buddhist manuscripts, illuminated manuscripts of Hindu divinities such as Brahma, Vishnu, Shiva. *Kartikeya* and *Ganesh* were also frequently represented. Manuscripts continued to be painted and copied for centuries, for the act of donating a manuscript to a monk, priest, monastery or temple was considered by both Hindus and Buddhists to be an act of great virtue. Early illustrated manuscripts were executed in the same basic style but later examples, particularly paper manuscripts, clearly show signs of deterioration in quality.

Thanka Painting

Religious paintings worshipped as icons are known as *paubha* in Newari and *thanka* in Tibetan. The origin of *paubha* or *thanka* paintings may be attributed to the Nepalese artists responsible for creating a number of special metal works and wall-paintings as well as illuminated manuscripts in Tibet. Realizing the great demand for religious icons in Tibet, these artists, along with monks and traders. took with them from Nepal not only metal sculptures but also a number of Buddhist manuscripts. To better fulfill the ever-increasing demand. Nepalese artists initiated a new type of religious painting on cloth that could be easily rolled up and carried along with them.

Figure 14 Traditional Thanka
Source: culturenepal

One of the earliest specimens of Nepalese *thanka* painting dates from the 13th century and shows *Amitabha* surrounded by *Bodhisanava*. Another Nepalese *thanka* with three dates in the inscription (the last one corresponding to 1369 A.D.), is one of the earliest known *thankas* with inscriptions. The *'Mandala of Vishnu'* dated 1420 A.D., is another fine example of the painting of this period. Early Nepalese *thankas* are simple in design and

composition. The main deity, a large figure, occupies the central position while surrounded by smaller figures of lesser divinities.

Influence of Tantrism on Paintings

From the 15th century onwards, brighter colors gradually began to appear in the Nepalese *thanka*. Because of the growing importance of the Tantric cult, various aspects of Shiva and Shakti were painted in conventional poses. *Mahakala, Manjushri, Lokeshwara* and other deities were equally popular and so were also frequently represented in thanka paintings of later dates. The embrace of male and female is another common symbolism of the *Tantric* Buddhist art of this period.

2.3.5 Sculpture

Anther art that traces of Nepalese culture from its early beginnings right up to modern times is sculpture. As with painting nearly all Nepalese sculptures are of a religious character. In addition to the theme, it seems that the artists themselves were also greatly imbued with a feeling of religious devotion.

Figure 15 Traditional Stone Sculpture
Source: culturenepal

Golden Age of Nepalese Sculpture

Nepalese sculpture reached its zenith in the *Lichchhavi* period; stone, copper and bronze images from this period show round faces with slanted eyes. While attention was also given to details, the main feature of this period is presentation of simplicity.

The use of clothes and ornaments was quite restrained. Many Hindu deities, for example are shown wearing only a dhoti (skirt-like lower garment). Buddhist deities were carved to show them wearing long *sanghatis* (a long saffron-colored robe that the Buddhists wear hanging from the shoulders). *Lichchhavi* period sculptors mostly used basalt for their work, first chiseling and then smoothing and varnishing perhaps with iron dust. The limbs of *Lichchhavi* period idols were so beautifully carved that it is not possible to find one specimen with a chiseled mark. Some of the best examples of *Lichchhavi* art are the images of *'Sleeping Vishnu'* in Budhanilkantha, located eight kilometers north of Kathmandu.

2.3.6 Crafts

1. Woodcarving

Besides stone sculpture and bronze casting, another art form worth mentioning briefly is woodcarving. No visitor to the Kathmandu Valley can fail to be impressed by the numerous extremely intricate and beautiful windows, doors, temple roof-struts and

Figure 16 Wood carvers in a building courtyard
Source: Sanskrit magazine

other artifacts carved entirely by hand. As wood is obviously more vulnerable to the ravages of time than other art forms, well-preserved specimens only date back to the fourteenth century and the beginning of the Malla period. From this period onwards, woodcarving became an integral part of Nepalese architecture, some of the best examples being the old royal palaces of Kathmandu, Patan and Bhaktapur and a number of different *Viharas* (monasteries) around the Valley.

The kings who ruled the three cities of Kathmandu Valley were great patron of arts. With their support the *Newar* people of the valley who are considered to be the native people developed a wood carving tradition in the valley.

2. Metal Craft

It is one of the craft in *Newar* community. Generally, *Tamrakar*, one of the social groups of Newars, holds metal craft. The extensive and elaborate craft can be found in Kathmandu Valley. In this craft, a property of metal is basic to include design and construction with sheet, wires and tubes and soldering, welding and casting of metal craft. It deals with various forms of jewelry, ornaments, welded metal sculptures executed in copper, bronze, brass and silver etc. Hand and power tools are used in various processes. Design of Jewelry may require the addition of stone setting and addition.

Figure 18 Carving of metal sculpture (Source: Google.com)

Figure 17 Worker carving astamangal (Source: Sanskriti Magazine)

3. Stone Craft

It is also one of the basic craft in *Newar* community and of traditional religious architecture in Kathmandu Valley. Stone craft is very sensitive and challenging job. so, require high quality workmanship. Different earpieces, armlets, bracelets, anklets, styles of halos, folds of garments, manners of sash, and many others are the distinguishing features that classify the variety of art forms found in stone sculptures.

2.4 CULTURE

2.4.1 Festivals

Newars' festivals start from *Gathanmugah* and ends in *Sithi Nakhah*. Therefore, *Gathanmugah* is also known as *Kayahmacha Nakhah* (the son festival) and *Sithi Nakhah* is also known as *Mhayamacha Nakhah* (the daughter festival) in *Newar* culture. No festival is observed in between *Sithinakhah* and *Gathan Mukhah* as the farmers are busy in their work at that time. The festivals celebrated by the *Newars* are related with their places and lives. Thus, through the festivals observed by the Newars, one can know many things about them. (Bajracharya, about Newars)

Gathan Mugah (August)

It is festival of cleaning. Since farmers are busy in farming in rainy season, they do not get time to clean their house and even take bath and wash their clothes. Thus, as their work finish by *Gathan Mugah,* they take bath, wash their clothes and clean house in *Gathan Mugah*. On this very day, girls throw all their playing dolls. Every corner of a house is cleaned and incense is burnt to kill insects. *Chahray angu* (a ring made of metal alloys) is wore on this occasion. In evening, effigies of *Gathan Mugah* are made from green reeds. They are dragged out of the town and burnt there.

Gunla Dharma (August-September)

Gunla is a month according to Nepal Era, which falls in the middle of monsoon (August). This month is considered as holy Buddhist month. Day in day out, whatever the weather may be, devotees visit Buddhist monasteries, courtyards and shrines every early morning by playing *Gunla Bajan*. *Gunla Bajan* includes *Dhah* and *Naykhin* accompanied by cymbals and shwam.

Gunhu Punhi (August- September)

Gunhu Punhi is one of the most significant festivals of the *Newars* which lasts for 9 days. First day, known as *Gunhu Punhi*, the *Newars* drink broth consisting of spouted mixed cereals. Everyone gets *doro,* a protection cord tied in one's wrist from the brahmans. On this day, food is offered for the frogs in farms, which is known as *Byanja Nakegu*. *Saparu* is the second day of *Gunhu Punhi*. On this day people, whose family member died in that year, dressed up as cows' parade in the town. It is believed that cows help the departed soul to enter the heaven easily. Other remarkable thing is humor and satire presented on this day. Last day of *Gunhu Punhi* is *Krishnastami*, birth anniversary of lord Krishna, an incarnation of lord *Vishnu*.

Pancha Dan (August-September)

Pancha Dan is observed by Buddhists only, especially by *Shakyas* and *Bajracharyas*. Buddhist antiques are displaced and gigantic effigies of *Dipankar* are parade around the town. However, the main highlight of the festival is the giving away of alms to Buddhist monks.

Yanya Punhi (September)

Yanya Punhi is dedicated to lord Indra, the king of heaven. This is a week-long festival which begins after the erection of *Yosin*, a ceremonial pole. The main feature of this festival in Kathmandu is a week-long display of gigantic mask of *Aakash Bhairab* and procession of *Kumari*, the living goddess along with other two living gods *Ganesh* and *Kumar*.

Mohani (October)

Mohani is observed for two weeks. It is observed with great joy. Barley seeds are planted on the first day which is known as *Nahla Swanegu*. It is nurtured for nine days. On the day of *Astami, koochhi bhoya* (a feast with two manas i.e., about half kilo of beaten rice) is eaten by gathering family members. On *Nawami, (Syakotyako) Durga* is worshipped with goats, cocks sacrificed. *Nahlaswan* i.e., the fresh shoot of barley is also offered. The concluding day of the festival, i.e., on *Chalan,* processions with scimitars takes place in various places of the *Newar* settlements, which is commonly known as *Payah*.

Swanti (October-November)

Tihar, the festival of light lasts for five days. *Swanti* stands for *Swanhu Ttithi* which means three days in Nepalbhasa. Among five days of *tihar* three days are mainly celebrated. On the day of *Laxmi* puja, *Laxmi*, the goddess of wealth is worshipped and, in the evening, lights are burnt to invite *Laxmi*. *Mhapuja* is the day of worshiping one's body. This is the New Year's Day according to Nepal Era. *Kija Puja,* the last day of the *Swanti*, is dedicated to brothers. Sisters worship their brothers on this day.

Sakimila Punhi (November- December)

Sakimila Punhi (Sakimana Punhi) or the full moon day of boiled arum is the festival of eating arum, sweet potato and fried grains. *Halimali Bwayegu* (exibiting figure designs of fried grains) with *Dapha Bhajan* or *Dhalcha Bhajan* (chanting religious hymns) takes place in the evening in every section of the settlements.

Bala Chahre (December)

This is the festival of scattering seeds (*sadhbew*) and praying for the souls of the departed in Pashupati, Kathmandu. In many places it is celebrated by gathering the members of *Milah Guthi* (a kind of social association) and banqueting together.

Yomari Punhi (December-January)

It is post-harvest festival of worshipping the newly brought rice and *Annapurna*, the goddess of grains, for good harvest. *Yomari Punhi* lends its name from *Yomari* (a typical steamed cake of rice flour dough stuffed with a mixture of sesame and molasses), which is offered in *Dhukoo* (store room) and eaten on this day.

Ghayh Chaku Sanhlhu (January)

Also known as *hamoh sanhlu*, this festival is observed according to solar calendar. On this day, people take bath early in the morning and offer sugar candy, pills of sesame and molasses etc. to their priests. They too eat yams, spinach, sweets of sesame and molasses to warm their body. People rub mustard oil over their bodies in the sun.

Swasthani Bakhan Kanegu (January-February)

In *magh* month, from *mila punhi* (full moon day-Jan) to *seeh punhi* (full moon day-Feb*.) Swasthani Bakhan* (*Swasthani* Story) is recited every evening for a month. it is believed that worshipping *Swasthani* brings happiness in life.

Shree Panchami (February)

Shree Panchami or *Basanta Panchami* is concerned in honor of *Saraswati*, Hindu goddess of learning. Artists, teachers, students gather at *Saraswati* temple in different places. Buddhists worship *Manjushree* on this day.

Sila Chahre (March)

There are 24 Shivaratris in a year, among which *Sila Chahre* is celebrated as *Maha Shivaratri*. *Shiva* is worshiped on this day. people take bath and fast on this day. People who stay awoken for the whole night get success in every works.

Holi Punhi (March-April)

Holi Punhi, the festival of color begins officially with the raising of huge ceremonial pole at the Basantapur of Kathmandu. Though celebrated for a week, *holi punhi* or (full moon day-March) is the main day. This festival is believed to be observed since the period of lord *Krishna*. People play with water and color and roam around the streets.

Pahan Chahre (April)

Pahan Chahre or *Pasa Chahre* is specially observed in Kathmandu only. On this day, *Mahadev* in the form of *Pisach* (*Lukumahadyah*) is worshipped. Thus, the festival is also known as *Pisach Chaturdasi*. Different palanquin circumambulation takes place in Kathmandu for a week.

Biskah Jatra (April)

The word *'Biskah'* or *'Bisket*' is said to be derived from *'Bee Sikah',* which means 'after death of serpents'. It is said that this festival was begun to celebrate after the death of serpents, serpents described in various legends. Even though it is said so, from various chronicles, sacred writings, inscriptions and the culture of *Bisket*, it is known that it was not used in the sense of death of serpents. This festival is celebrated mainly in Bhaktapur and Thimi with Chariot festival, tongue boring festival and with music and dances in other parts of the valley as well.

Machhendra Nath Jatra (May-June)

There are two *Machhendra Nath* festivals, namely *Rato Machhendranath* (*Bunga dyah*) *Jatra* and *Seto Machhendranath (Janmah dyah) Jatra*. The main features of these festivals are pulling of a huge four-wheel chariot of *Machhendranath*. The former, observed in Lalitpur, starts from Pulchowk and ends in Jawahlakhel, where ritual display of legendary vest (*bhoto*) takes place. It is observed for a month. The later, observed in Kathmandu, starts from *Tindhara* and ends in *Lagan*.

Swanya Punhi (May-June)

Budhha Jayanti - full moon day April/May is the day of birth, attainment of enlightenment and death of Lord *Budhha*, the light of Asia. On this day worship of *Budhha* takes places in Buddhist monasteries and specially in *Swambhu Stupa* of Kathmandu.

Sithi Nakhah (June)

Sixth day of bright lunar fortnight is dedicated to *Lord Kumar*. This is the day when *Kartikeya Kumar (Sithi Dyah)* was born. On this day, people take bath and houses are cleaned. Wells and conduits are also cleaned on this day, this is also the day of eating *Chatamari* - a typical rice flour bread and *Wo* - a flat cake of mashed lentils. It is the last festival of a year that the *Newars* observe.

2.4.2 Rituals

Pre Natal

There are many pre-natal rituals, however majority of those: *pusawan kriya*, *simatopanayan*, for example are no longer in existence. Nevertheless, *Dhau baji nakegu* (offering yogurt and flattened rice along with *yomari,* sweets etc.) during pregnancy is still practiced by many castes.

Birth

After child birth, it is informed to maternal home of the mother. It is done by sending sugar candy, nutmeg, ginger etc. After the birth, concerned family becomes ritually impure. They become pure after *'Machaboo byanke'* tradition which is done on forth, sixth or tenth day after the birth. There is also a tradition of offering different kinds of foods from maternal home of the mother within a month of delivery, which is known as *'Baji nakah wonegu'* or *'Machaboo swahwanegu'*.

Macha Janko (The Rice Feeding)

The rice feeding is done in 6th or 8th month (in case of a boy) and in 5th or 7th month (in case of a girl). After worshipping *Ganesh,* the child is offered rice pudding with verities of food. It is believed that the child gets similar food throughout his life as the food offered on that day.

Busankha (Boys)

Busankha means shaving of hair. it is done at the age of 6 or 7. Shaving of hair is done by the maternal uncle of the boy; sister of the boy's father holds the shaved hair. These days, *busankha* is done at the time of *'kayatapuja'*.

Kayatapuja (Boys)

Kayatapuja or fixing of loin cloth is done to mark the attainment of puberty. *Bajracharya* and *Shakyas* perform the tonsure ceremony, *Chudakarma*. During this, one has to visit shrines and pay homage to *Kwahpahdyoh* and make offerings. After *kayatapuja, Jyapus* and *Sayamis* undergo *Ohla* (which is less practiced these days.)

Ihi (Girls)

This is a ritual symbolic marriage with a *bel (byah)* fruit, the symbol of lord *Vishnu*. This ceremony, celebrated at the age of 5-11, is done to prevent widowhood. As they are married to immortal lord, the *Newar* girls never become widow. The girls are also taught household works in *Ihi.*

Bahra (Girls)

After *Ihi*, a *Newar* girl undergo *bahra*, ritual confinement of a girl before the onset of menstruation. A girl is kept separated from all males and from sunlight for 12 days. On 12th day the girl has to pay homage to the sun.

Ihipa (Marriage)

Marriage in *Newar* culture is social union of two families. The parents arrange marriage for their sons and daughters. After the groom's and bride's family's decision, the marriage is confirmed by giving 10 betel nuts along with fruits, sweets etc. (known as *lakha*) from groom's family to the bride. Marriage ceremony is performed at the time scheduled by the astrologer. *Swayamber, Honkegu, Chipa Theeke* (symbol of sharing everything) is performed. Bride presents 10 betel nuts to all her family members. Brother of her mother, *paju*, takes on his back and carries her out of the house. He then presents her to the groom's family. The bride's family visit the groom's house on the 4th day, to see how the bride is being treated, which is known as *Khwah soye* (seeing the bride's face).

Jyah Janko

Jyah janko is old age ceremony to mark one's longevity. It is celebrated for five times.

First - Bhimratharohan - At the attainment of 77 years, 7 months, 7 days
Second - Chadraratharohan - At the attainment of 83 years, 4 months, 4 days
Third - Devaratharohan - At the attainment of 88 years, 8 months, 8 days
Fourth - Divyaratharohan - At the attainment of 99 years, 9 months, 9 days
Fifth - Mahadivyaratharohan - At the attainment of 105 years, 8 months, 8 days

Sithan (Funeral)

As soon as a person dies, all the *Guthi* (social organization) members are informed. Four lamps are set around the four directions of the corpse. *Mha gele*, adoration of the corpse is marked. Funeral procession is accompanied with *Nayahkhin* drum followed by a lot of people wailing and crying. Cremation is different in different castes.

2.5 NEWARI CUISINE

Of all the Nepalese people, the Newars celebrate the greatest number of festivities and feasts. They are known for an immense variety of cuisines they prepare in many occasions.

Newar food can be divided into two main types:

- **Daily foods**- Jyona (Lunch), Beli (Dinner).
- **Bhoye**- Banquet having a number of dishes with systematic arrangement in order.

The main dishes of the Newars are as follows:

Appetizers/Snacks

- **Chatanmari**-It is something like what you call pizza. It is prepared from rice flour with minced meat or egging topping or also can be prepared plainly. It is mainly eaten in *Digu Puja.*
- **Wo**-A flat cake of mashed lentils with or without egg/minced meat topping.
- **Samay Baji**- A ritual set of five dishes representing *Pancha Tatwa*. It constitutes *Baji, Samay* (flattened rice), *chhoyla* (roasted meat), *sanya* (smoked fish), *palu* (sliced ginger) and *aila* (wine).
- **Chhoyla**- Spicy meat, ether roasted or boiled known as *haku chhoyla* or *mana chhoyla*. It is generally served with flattened rice and homemade wine.
- **Sukula**- Dried meat diced and spiced.
- **Tahkha**- A jelly-like meat.

Main Dishes

- **Jyona/Beli**-Boiled rice. Usually, these words stand for a set of rice, and curries.
- **Ken**- Lentil soup served with rice.
- **Wauncha**- Green vegetables, especially mustard/spinach in feasts.
- **Boobah**- Bean curry.
- **La**- Meat curries, various verities: *Pukala* (fried), *Gorma* (white jellied meat), *Dayakala* (curried meat), for instance.

Relishes

- **Sanan**- Pickle, usually hot.
- **Sanya Khuna/ Nya Khuna**- Jellied fish soup.
- **Paun Kwa**- Sour soup made from hog plum.

Dessert

- **Juju Dhau**- Yogurt of high quality.

Sweets

- **Pachinta Mari**- Sweet made of wheat flour and sugar, a must in *Pastah Bhoye* (high class wedding feast) which is taken away to home.

Drinks

- **Thon**- White beer, made of fermented rice. It too has some types: *hyaun thon* (red one), *taku thon* (thick one) etc.
- **Aila**- Colorless homemade liquor.

2.6 CULTURAL ESSENCE- PUBLIC LIFE

2.6.1 Public Space

In defining public space, it is essential to consider the meaning of the term "public". Chitrakar (2015, p. 12) suggests that "the word public originates from the Latin and refers to people, indicating a relationship to both society and the state". This suggests that "public" may be any entity, regardless of whether tangible or not, that relates to people and is shared by and open to them in a community as a whole. The concern here is space as the physical entity that is linked to the term "public". This provides a basic understanding of public space as the space that concerns people and may be interpreted "as [the space] open to people as a whole" (Chitrakar, 2015, p. 12).

Public space is essentially a physical setting provided for a range of social activities taking place within a community. It also evident that accessibility is another key feature of public space. Madanipour (2010) argues that any public space is by definition public, meaning that it should be accessible to all people (Chitrakar, 2015, p. 12).

In these definitions, public space is characterized as a space owned and controlled by public agency or a community. However, due to the increasing level of public life and social interaction taking place in "semi-public" spaces, the concept of public space can be used in a slightly varied way. Public space means any physical space with a potential to develop social interaction regardless of ownership and control. It can be in both outdoor and indoor locations (Chitrakar, 2015, p. 13), but it needs to be accessible to the users. This definition of public space also includes street networks and community buildings, in addition to the open space.

2.6.2 Dimensions of Public Space

There are mainly three dimensions of public space. They are:

- Physical Dimension
- Social Dimension
- Psychological Dimension

The physical dimension refers to the physical environment or "provision" of public space which provides a setting for social interaction, whereas the social dimension refers to the "use" or activities occurring in the space The psychological dimension relates to the perception of public space, which may be expressed in terms of how people interpret the space and give "meaning" to it, and how such meaning helps develop a sense of community or place (Chitrakar. 2015). A key element of community is social interaction, and the use of public space has a potential to create this. In other words, neighbourhood residents engage in social interaction in the use of public space. Thus, the social environment is

created in the use of physical environment, and these environments are complimentary to each other. The design and development of public space should lead to the creation of physical environment that encourages social interaction (Chitrakar, 2015).

Neighbourhood public space becomes a meaningful social territory when it has a meaning for people, as it invites them and encourages use and participation (Chitrakar, 2015). While most researchers agree that the physical design of neighbourhood alone cannot necessarily foster a sense of community, public space remains a key design feature with a potential to offer place attachment and meaning to the users.

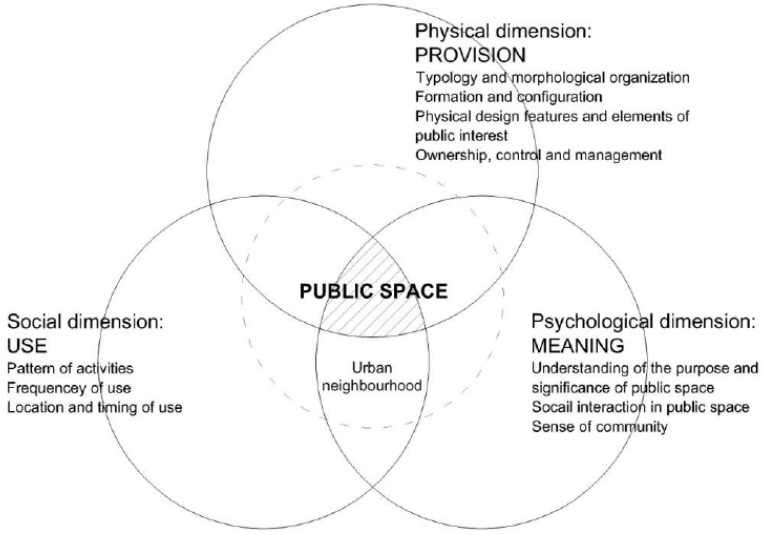


Figure 19 Dimensions of public space *Source: PPS,2000*

2.6.3 Key Qualities of Successful Public Spaces

Successful public spaces are designed and developed in such a way that they are accessible and can attract a range of use and activities, providing an opportunity for socialization among the users. The Project for Public Spaces (PPS) (2000) outlines four key qualities of successful public spaces:

a) Access and Linkages
b) Sociability
c) Use and Activities
d) Comfort and Image

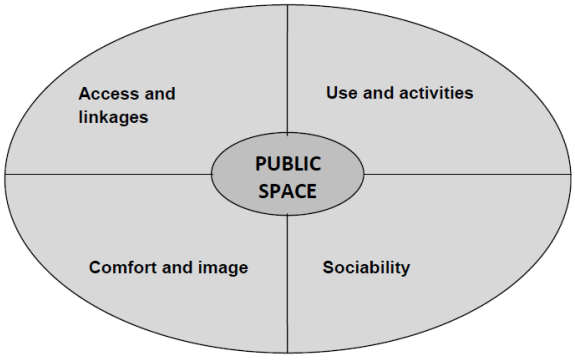


Figure 20 Key qualities of successful public spaces Source: PPS, 2000

a) Access and Linkages

Accessibility is one of the key factors in a successful public space. An ideal public space should be easy to locate, convenient via public transportation, and have purposeful paths that lead to entrances and exits.

b) Sociability

A place is only as successful as the degree of sociability. As public spaces are intrinsically tied to community, one must be able to socialize freely in the space, which helps people strengthen their roots with their community and the people around them.

c) Use and Activities

While a well-designed public space alone can inspire people to congregate, and use the space, planned activities, especially if it's initiated by the city, play a huge role in determining how entertaining and fun a city can be, which of course boosts tourism. both domestically and internationally.

d) Comfort and Image

Comfort means being able to sit in the shade away from the sun. spacious seating for privacy, or grassy areas for picnics.

2.7 PUBLIC SPACE IN THE TRADITIONAL NEWARI TOWNS

The traditional towns of the Kathmandu Valley as they appear today were mostly built during the *Malla* period by the *Newars*. They are compact and dense settlements with a definitive urban character. These towns were laid out on the highlands, preserving the fertile agricultural low lands. Many towns were fortified for protection against attacks and had a definite boundary pierced by numerous entry gates at various locations (Chitrakar, 2015, p. 92).

The urban fabric of the *Malla* towns can be considered a wise assemblage of beautifully carved streets and squares. This exhibits a fine-grained network of urban blocks interspersed with a series of interconnected squares or courtyards.

2.7.1 Typology, Distribution and Hierarchy of Public Space in A Town

Urban spaces of the *Malla* towns have been organized in a very unique and innovative way. Tiwari (1989, p. 95) suggests that these towns exhibit "a distinct set of [urban] squares with a clear hierarchy of social [and] cultural activity". These are:

a) the *Durbar* (palace) square
b) the market squares
c) the residential neighbourhood squares
d) the private residential square

In every principal *Malla* town, there is only one *Durbar* square while other square types are numerous and widespread, and can be considered as neighbourhood public spaces. While the private residential square is a courtyard house built for communal life of an extended family and exists largely independent of street space, "the rest of the three squares are dependent on the street for their visual and spatial appeal". The residential neighbourhood square can either take the form of a large enclosed courtyard or is often laid off the streets and enclosed partially. It houses a number of extended families often belonging to the same clan group and consists of some public amenities such as a temple

or a *stupa* or a *dhara*. The market square is also a community square but laid at street interactions and considered a significant nodal point of the town. It exhibits a "heightened urban space sense and has many elements of urban interest" (Chitrakar, 2015, p. 95-96).

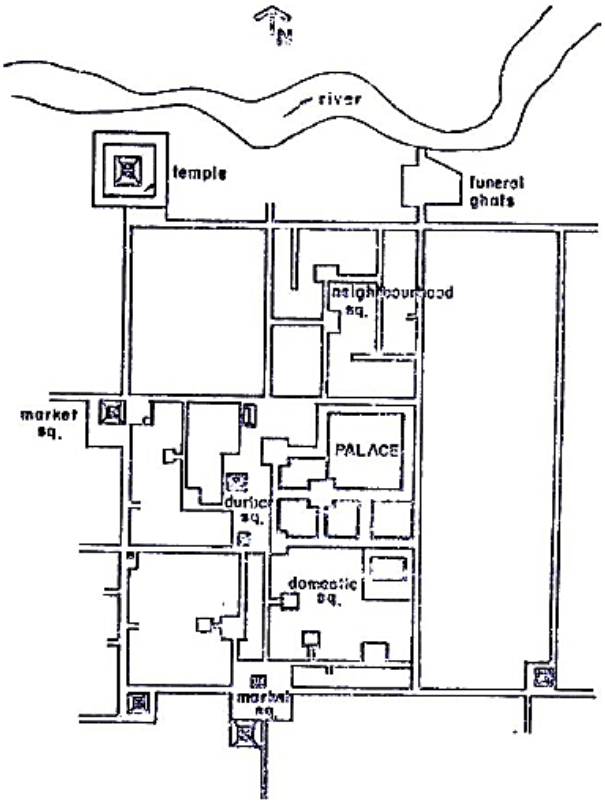


Figure 21 A diagrammatic layout of a typical Malla town showing a hierarchy of urban spaces
Source: Tiwari, 1989

2.7.2 Neighbourhood Public Space

1) Space Formed at Street Intersection – The Street Square

With several streets culminating in it, the market square represents a neighbourhood public space formed at the street intersections. As already mentioned, this street square reflects a nodal point of a town in which no symmetry is found in the physical layout. This type of physical layout leads to highly informal urban space settings. The shape and size of the street squares greatly vary. Each space exhibits a unique design in terms of spatial configuration and enclosure, and the use and placement of elements of urban interest. Some of them are even smaller than the residential neighbourhood squares yet "they play a great role in socio-cultural scene of the town" (Tiwari, 1989, p. 96 cited by Chitrakar,2015).

2) The Enclosed Space of a Courtyard

The residential neighbourhood and private residential squares form a neighbourhood public space organized around a courtyard. By their very nature, these are mostly enclosed spaces with a few exceptions, and exhibit a tight geometry of either a square or a rectangle in the plan form. A combination of these squares often forms a series of interconnected courtyards embedded within an urban block (Chitrakar,2015).

Table 4 Elements of Public Interest in Urban Neighborhoods, Their Purpose and Description Source: (Chitrakar,2015)

Element type	Purpose and description
Temple	A temple is the most important and essential element of neighbourhood public space, serving a religious purpose. The temples are either square or rectangular (often octagonal) in shape with symmetrical plan and elevation. A neighbourhood square may have more temples, in addition to the one housing the deity of Ganesh.
Pati – a public rest house	A Pati or public rest house serves as a place for respite and a place for travelers to stay overnight. These also serve as a place for leisure in which to spend daily life, a place for exchanging goods and a place for playing traditional music. In most cases, these do not appear in isolation but are always physically embedded within the built mass or fabric.
Well	Wells are extensively present in traditional neighborhoods as a source of water for the residents and define a public domain in neighbourhood space.
Stone water spout	These are sunken platforms with stone spouts discharging the water. These elements create space within themselves with the confining walls and are usually accompanied by public rest houses on the ground level.
Stupa and Chaitya	These are important Buddhist shrines and work as space radiating volumes. The chaityas are usually moderate in size while the stupas are comparatively larger volumes.
Dabali – an open elevated platform	A Dabali is simply an elevated platform constructed for a simple reason of gaining height. They serve the purposes of a stage for performance or a space for display of goods and for resting the chariots during festivals. The dabalis regulate the horizontal flow of space, and guide a movement of users.
Chariot	These are temporary elements but make equal contribution to spatial enrichment whenever present. Most of these chariots are miniatures of temple form while some are tall and tower-like structures34. These movable elements show their presence in an urban space for varying durations during major festivals.

2.8 CLIMATE RESPONSIVE NEWARI ARCHITECTURE

Traditional architecture in the Kathmandu Valley is the outcome of centuries of optimization of material use, construction techniques and climate consideration. However, contemporary buildings are being built with little consideration of the climate. There are guidelines that provide recommendations on the orientation and layout of buildings, the size and position of openings, and the characteristics of walls and roofs (Upadhyay, 2006). Since Newar are ethnic groups of Kathmandu valley, so the warm temperate climate of Kathmandu has affected the settlement pattern and other characteristics of Newari Architecture.

1. Settlement pattern

Settlements in Nepal's warm temperate hill climate are rather of scattered and dispersed character. The villages and towns built by the tribe of Newars only, have a denser settlement pattern with its characteristic courtyards (Bodach et al.).

2. Building form and orientation

Newar houses being part of compact settlement with high density are arranged to create interconnected courtyards. The courtyards are designed in such a way to allow solar penetration of buildings and provide a warmer outside space for all kind of household activities during sunny winter days (Bodach et al.).

3. Building stories and internal space arrangement

Newar houses have typically three or three and a half stories. Until the early 16th century residential houses were not allowed to exceed height of the temples in Newar settlements. The low room height being between 1.6 and 1.9 m makes it easier to heat the building during winter season.

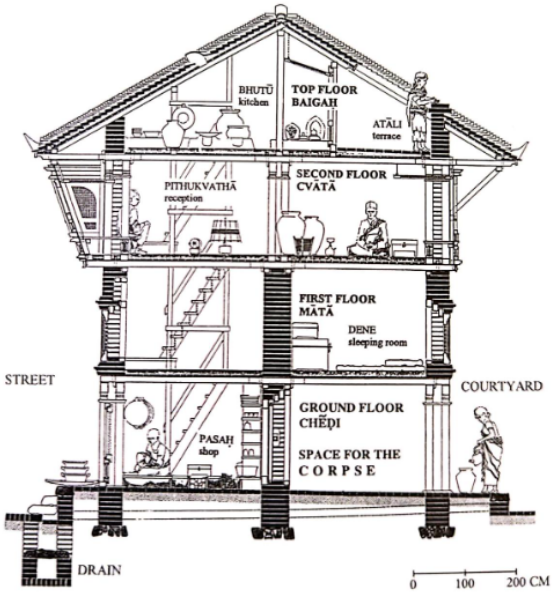


Figure 22 Section of Newar house with vertical space arrangement

Source: Bodach et al.,2014

Spaces in Newar houses are vertically planned. The ground floor is only used for entering the house or sometimes as storage and creates a buffer to the cold and humid ground. The bedrooms are located in the first floor while the main living area is in the second floor. Both receive enough solar radiation through the windows to heat up the room during the day. The space under the roof (attic space) is used as kitchen with an open fireplace. Due to the location of the kitchen on the top of the building, living and bed rooms are protected from overheating in summer. Rooms are found to be double-banked. The courtyard of the Newar houses is an important semi-open space for work. It is designed in such a way to be sunny in winter and shaded in summer (Bodach et al.,2014).

4. Walls

Newar architecture uses sundried or burnt clay-bricks as main walling material. The walls have a thickness between 28cm to 70cm, resulting in a high thermal mass of the building. The outer wall is made of burnt bricks while on the inner side sun-dried inside bricks are used. (Bodach et al.,2014).

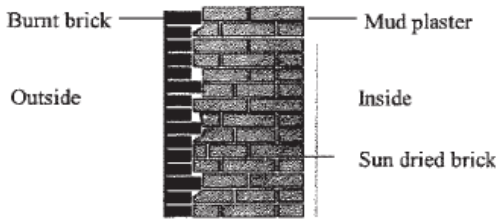


Figure 23 A Typical Wall Section of a Traditional Building
Source: Upadhyay, 2006

5. Roof

A large roof overhang of minimum 50 cm protects the walls from the heavy monsoon rain and avoids solar penetration of the facade during summer. Newar architecture has developed a water inclusive roof design of burnt clay tiles which are placed upon a mud layer of 4cm to 10cm (Bodach et al.,2014).

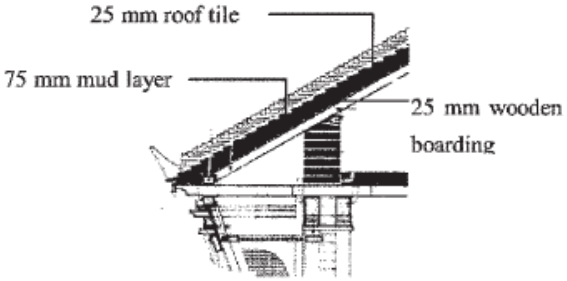


Figure 24 A Typical Roof Section of a Traditional Building
Source: Upadhyay, 2006

6. Foundation, floors and ceiling

The foundation of Newar houses is made of a 60 to 80 cm deep stone plinth. The ceilings are very low (not more 1.80 m) to reduce the air volume that needs to be heated during the cold season. In all studied houses a wooden framework of pillars and beams is used to support the ceilings. It is covered by lathwork and rough casting of 20 cm mud layer and a final layer of a mixture of clay and cow dung. The additional use of clay and earth increases the thermal mass of the floor and contribute to balance the diurnal temperature changes (Bodach et al.).

7. Openings

In Newar houses, the main living room has a big window with decorative wood carvings that allows solar radiation of lower angle to heat the room in winter. Many houses have grilled windows to protect from solar penetration in summer. The windows are almost always oriented southwards aiming to enhance solar heat gains during winter. The openings are often equipped with shutters that can be closed during cold nights in summer and the cold season. In this way the envelope tightness is increased and the heat losses are reduced.

They use a large roof overhang to shade south facade and windows. The roof overhang of Newar architecture is widely known because of its decorative character, particularly, in temples and palaces where

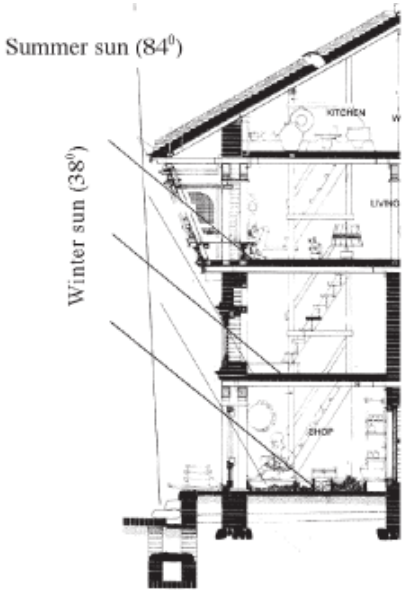


Figure 25 Arrangement of Openings and Solar Penetration through Windows in Different Seasons

Source: Bodach et al.,2014

fine wood carvings can be seen. Moreover, the roof overhang protects the walls from the heavy monsoon rain (Bodach et al.,2014).

2.9 THE FEATURES AND PRINCIPLES OF NEWARI ARCHITECTURE WITH IDENTITY

The features and principles of Newari architecture can be understood by the conceptual attributes which helps to determine the identity. The concept, not only in Newari architecture today, but also in the world architecture, is forever sustainable and repeatable. These attributes help to coordinate the architecture with human psychological and physiological needs. Also, today these characteristics can match the new life's body with Newari identity with the help of contemporary technology. Some of these concepts can be applied to the following categories:

1. Symbolic Insights

This feature arouses the searcher sense of human and encourages him to move in space and find hidden meanings in architecture, feeling spiritual greatness in simplicity and purity in Newari buildings formation and composition has been considered. This is the strange story of the mysterious Newari architecture that works with the simplest of materials in regular ground and its mystery and ambiguity to the followed function impels humans to think again (Arabi, 2015).

2. Human Scales

One of the long-standing principles of Newari architecture is compatibility with proportions of human body. "This architecture is based on the human scale and golden geometric proportions of the human body" (Gellner, 1986).

3. Inside and Outside

The relationship between the outside and the inside is precise. In the culture of this type of architecture, the real value is given to the outside architecture. Some even say that people live more outside rather than inside. This property is deeply rooted in social and philosophical foundations and principles of Newar. The difference between interior and exterior space is the major attribute of Newar architectural space and is consistent with the culture, customs, worldview and the special lifestyle of Newars.

4. Diversity but Uniformity

Despite the very complex appearance of structures and wooden carving, architecture, sometimes have emerged based on very simple principles. Each component of Newari architecture is complete by itself and also these components together make up one full whole. These components, like very regular cells present a very complex composition in the form of a collection. However, completeness of the component and the whole, without creating restriction to the whole, is an important characteristic of Newari Architecture.

5. Definition and Composition of the Space

In Newari Architecture, spaces are perfectly defined and properly combined together. Newari Architecture is narrator. Part of this feature, results from legibility of Newari Architecture and the semantic and cultural part, expresses the performance and purpose of building properly.

6. Transparency and Fluidity (Continuation)

Amidst the body of the Newari Architecture, space will never be marked decisively. In such a space, the human path or his look, consistently continues; so that, the spatial openings in horizontal and vertical lines, cause the transparency amidst walls and columns.

7. General Design Principles

Ideas in the form of opinions and thinking of designers are presented in physical elements and lead to the integration of architecture to achieve a specific purpose. So, a concept can lead the designer to create a good correlation between forms.

8. Geometry (Shapes and Forms)

Newari architecture is linked to the secrets of the creation by geometry. Architecture in its receiving section (human perception and feeling of architecture) requires preparation which is provided by geometry, through the placement of small and large proportion from specified center and place. The shape is a way to understand the culture shown in the built environment. It is the builders' talking about their architectural culture. Thus, using meaningful form in creating architecture spaces can be a way to achieve identity-oriented construction in contemporary architecture.

9. Building Materials

Building materials, in addition to acting as surface, have different characteristics such as roughness, smoothness, transparency, stability and purity Therefore, they convey different meanings in different uses. So understanding and proper using of semantic features and materials important in achieving architecture identity.

10. Relationship with Context

Constructing a building has a direct impact upon its surroundings. And the relationship between a work and its surrounding can lead designers in the creation of architectural space. Harmony between design and the surrounding environment and the least intervention in the surrounding natural environment is solution for creating identity-oriented works.

3 CHAPTER-III: TECHNICAL FOUNDATION

3.1 ADMINISTRATIVE SPACES

Plan of business where professional or clerical duties are performed. The term general office applies to space used primarily by secretaries, data entry personnel, clerks, and the like. Office layout is often based on a module derived with reference to common furniture, equipment and necessary clearances.

3.1.1 General Spaces of Office

General office space refers to an open area occupied by a number of employees, furnishings, equipment, and circulation area. Large open area permits flexibility and effective utilization, aid office communications, provide better light and ventilation, reduce space requirements, make possible better flow of work, simply supervision, and eliminate partition costs.

3.1.2 Office Planning Module

For large general offices, the planning unit or module is based upon one desk and chair and is thus about 5 by 6 feet. Since this dimension is also satisfactory for aisles between rows of desks the module can be used to form a regular grid for the planning of large office areas. In the layout of private offices, the controlling factors are the minimum practical office layout with the wall and window design. A planning module of 4 to 5 ft works reasonably well for this purpose. With this module the smallest office would be 8 to 10 ft wide, and a convenient range of office size is provided in increment of one module.

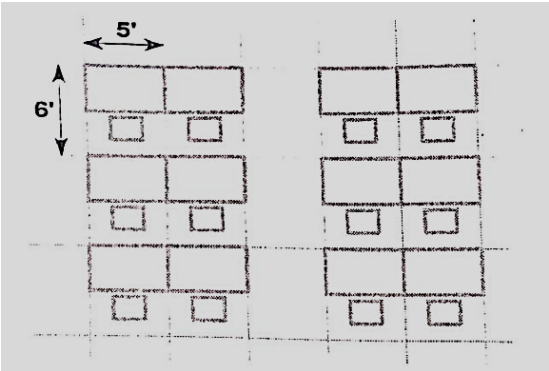


Figure 27 Planning module for layout of general office spaces

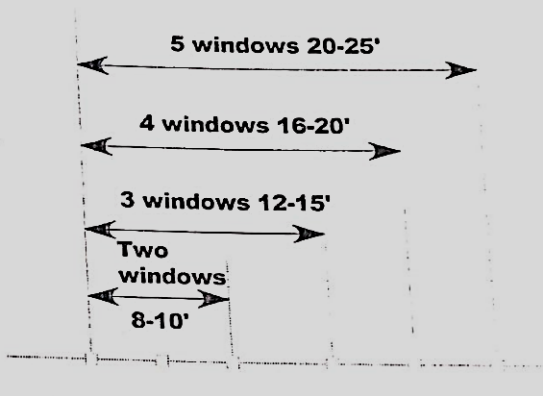


Figure 26 Private office widths using a module of 4'-5' with continuous windows

3.1.3 Circulation

- Aisles leading to main exits from areas which carry substantial traffic (main aisles) should be 60 inches wide.
- Aisles which carry moderate amount of traffic (intermediate aisles) should be 48 inches wide.
- Aisles between rows of desks (secondary aisles) should be approximately 36 inches wide.

3.1.4 Reception Areas and Visitors Control

An allowance of 10ft² for each visitor to be served used for space allocation. E.g.: 5 visitors at any given time need 50ft² be used in planning space.

3.1.5 General space requirements

- Space per person: 8m2 to 13m2 (optimum 10m2)
- Area per floor: 450m2 to 540m2 (No need of doubling the no of lifts, escape routes and lavatories)
- Typical President's office or chairman of the board - 23.22 to 37.16 m² (4 to 5 windows in length)
- Typical Vice-President's office - 13.93 to 23.22 m² (3 to 4 windows in length)
- Typical Executive's Offices - 9.29 to 13.93 m² (2 windows in length)
- Partitioned open spaces – Clerical supervisor or manager - 7.43 to 10.2 m²
- Open Space - Clerical or Secretary 5 to 10.2 m²
- Most commonly used column spacing: 25ft; min. 20ft.
- Floor to floor height: 12ft. (11ft. to 14ft.)
- Finished ceiling height: 8ft. to 8.5ft.
- Elevators: one per every 25000 ft.2. Minimum width of elevator lobbies: 6 to 9 ft.
- General corridor widths: 5 to 6 ft.
- Maximum distance from the employee desk to nearest exit: 150ft.
- Maximum distance from desk to rest rooms and drinking fountains: 150ft.
- Corridors - 20% to 25% of the total usable areas for executive offices, reception rooms, open clerical areas, conference rooms, libraries, file, mail and storage rooms, computer rooms.
- Lighting requirements
    - Corridors: 200 lux
    - general office: 400 to 600 lux
    - Conference and Reception: 300 to 400 lux

3.1.6 Floor Area Calculations

Office area calculated into two parts:

- People spaces is calculated as: (standard individual spaces x no. of people) + secondary need+ 15% for primary circulation.
- Non-people spaces (e.g.: machine room, equipment + additional factor for primary circulation)

3.2 ACADEMIC SPACES

The academic spaces required for the design includes classroom for teaching language and script, training classes and studio for dance, song, music, painting and pottery.

3.2.1 Classroom

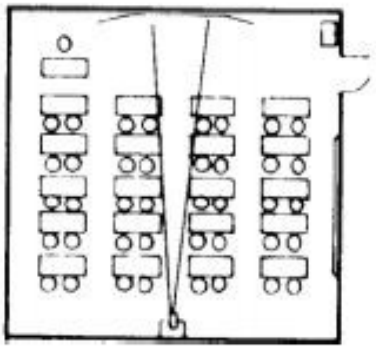


Figure 28 Classroom Layout

1. Theory Classroom

- 3'-6" space between seats centers laterally
- 4'-6" gap between end seat center and side wall
- 10' between front seat center and chalkboard

2. Practical Class (basic/ advanced):

Multipurpose space accommodation as per the requirement of the space.

Design standards:

a) Paper and clay work: 32m² for 25 people
b) Wood and metal work: 82m² for 25 people
c) Drawing room: 90m² for 25 people

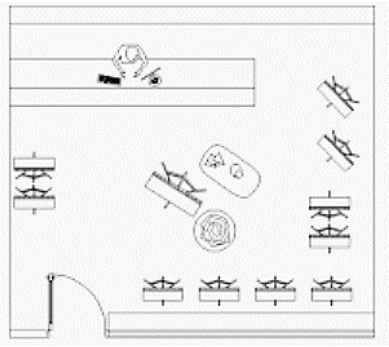


Figure 30 Drawing Room

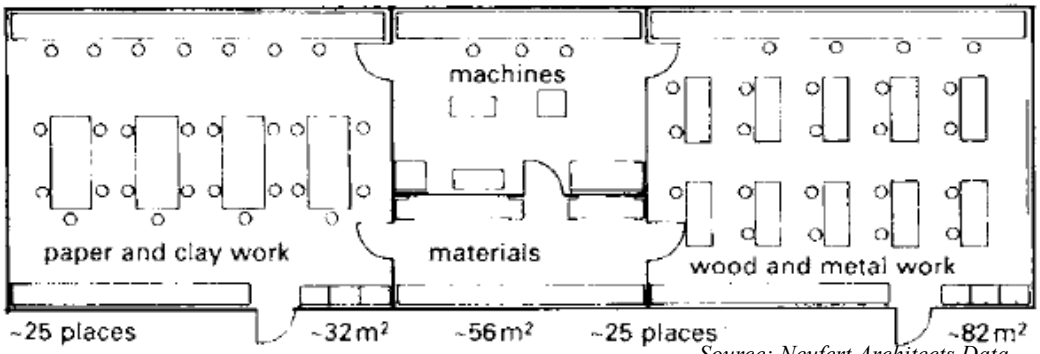


Figure 29 Multipurpose Space

Source: Neufert Architects Data

3. Seminar Room

- Standard size for a rectangular seminar room: 0.2 – 0.25 m2/ seat
- Standard size for a trapezoidal seminar room: 0.15 – 0.18 m2/ seat
- Auxiliary spaces are; space for storage, service room

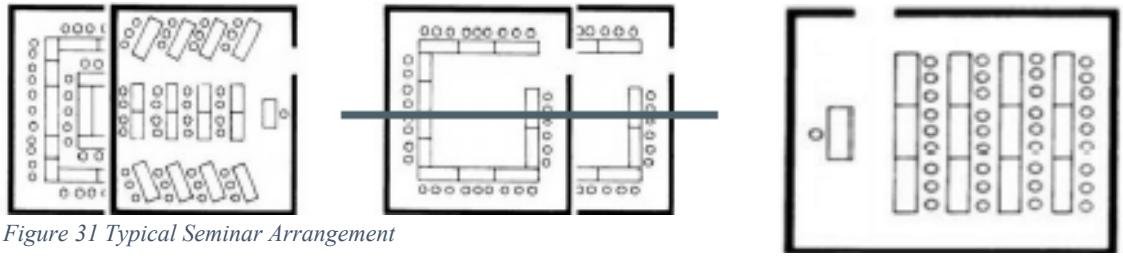


Figure 31 Typical Seminar Arrangement

Source: Neufert Architects Data

3.2.2 Pottery studio

The following were the technique used in traditional ceramic:

- Pottery is made on traditional wooden wheel.
- Coloring is done.
- Pots are dried out on the sunny day.
- Preparation for firing the pots with straw arranged in many layers.

Materials, Furniture, Tools, and Equipment Requirements

- Basic raw materials for pottery: Clay, Water, Colors, glazes etc.
- Types of furniture required: Portable clay cabinets, Damp proof drying cabinets, working tables, Spray booth, Kneading table, Sinks.
- Tools and Equipment: Wedging boards, Kiln carts, Gas ceramic Kiln, Electric Kiln, and Enamel Kilns. (Shrestha R., 2011)

Ergonomics in a Pottery Studio

Incorporate a minimum height range of 27.6 inches and a maximum height of 56.2 inches for workstations/worktables, palletized pieces, shelving units, and items on carts to eliminate overhead reaching and bending.

- Store frequently used materials at waist height rather than at floor level. Use extra pallets to raise the height of cart surfaces to the recommended ranges.
- Use scissor lift tables to reduce bending and overhead reaching, and pallet carousels and collapsible carousels stands to allow access to loads from various angles.
- Eliminate lifting and carrying items weighing more than 50 pounds, and always use carts to transport heavy materials long distances.
- Provide a faucet hose extension to eliminate lifting buckets into and out of the sink.
- Provide a range of heights for pottery wheels and stools and personalize the two heights for each user to eliminate back pain and discomfort. Use stools with lumbar support and tilt adjustment. Provide adjustable leg stools for level or tilted seats.
- Do not perform repetitive activities (wedging, throwing, and trimming) in long sessions. (Daily, April 15, 2019)

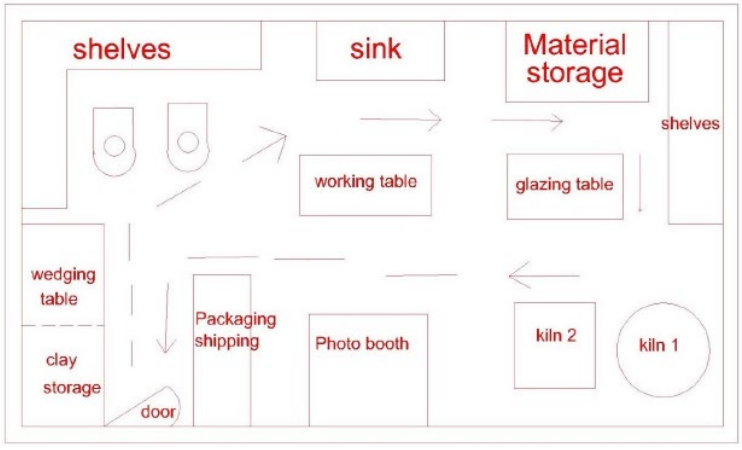


Figure 32 Layout of Pottery Studio

Source: Daily, April 15, 2019

3.2.3 Painting Studio:

Drawing is the basic tool, with the help of which an artist can make a design or image, using line or tone on any suitable surface. The design or image itself is called drawing.

Design requirement for drawing studio

- Drawings can be carried out in general studio space. No special machinery is required.
- As a rule, dust proof cubicle and store are required with a spray room about 30sq.m.
- Area of 120 sq.m.is sufficient for 20 students. Benches should be 4‘6" length & 2‘8"width per student
- Natural north and east light are preferred for drawing activities. If daylight is not enough, artificial light should be provided in preferred way.
- Display boards should be provided on the walls. Moreover, studio area should not be obstructed by any kind of structural member like pillar. (Shrestha R., 2011)

Design requirement for drafting studio:

- Design requirement is similar to drawing studio except for the furniture. The layout of the room should be such that each student can work on his own drawing table
- Display boards are required for teaching
- Storage area for papers, drawing is required
- Natural north and east light are preferred for drawing activities. If daylight is not enough, artificial light should be provided in much preferred way. (Shrestha R., 2011)

3.3 DISPLAY AREA

Display spaces can be in form of Museum, Gallery, Showroom, shops and so on. The project includes two types of display spaces:

- Gallery/ Exhibition Hall
- Showroom/Souvenir shop

3.3.1 Gallery

- Should have separate spaces for temporary exhibition and permanent exhibitions
- Variation in heights and wall alignments can create interesting spaces in a same sized gallery. Such variations in height, width, wall colors, and flooring creates spontaneous attention
- Future expansion should be taken into consideration so that the overhead lighting may be required in the roof of galleries
- Welcoming and eye-catching entrance is appreciated
- Separate entry and exit doors should be well planned not to disturb the flow of the viewers inside the space

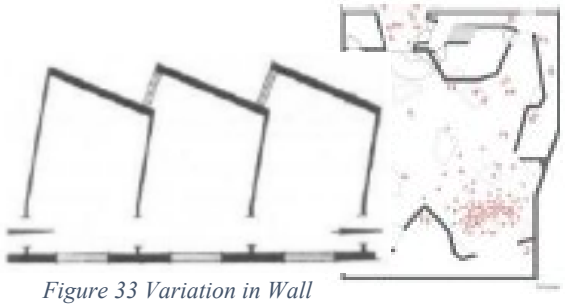


Figure 33 Variation in Wall

Figure 34 Variation in plan to grasp attention

Circulation Patterns

- Entry should guide the visitors to gallery area and the circulation should be continuous, uninterrupted and easily guide the visitors from one space to another
- Circulation must start in clockwise direction due to natural turn towards right hand side
- Centralized circulation is preferred for a gallery visit
- Fan Shaped provide wide range of possibility and has pros in technical and traffic management but creation of congestion in a single space and causes bottle neck

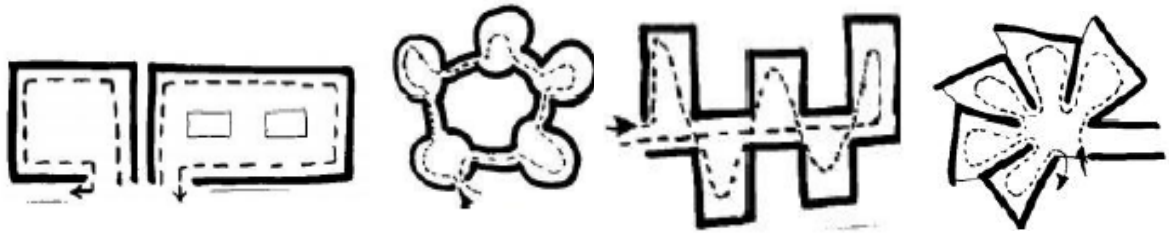


Figure 35 Different Types of Circulation Pattern

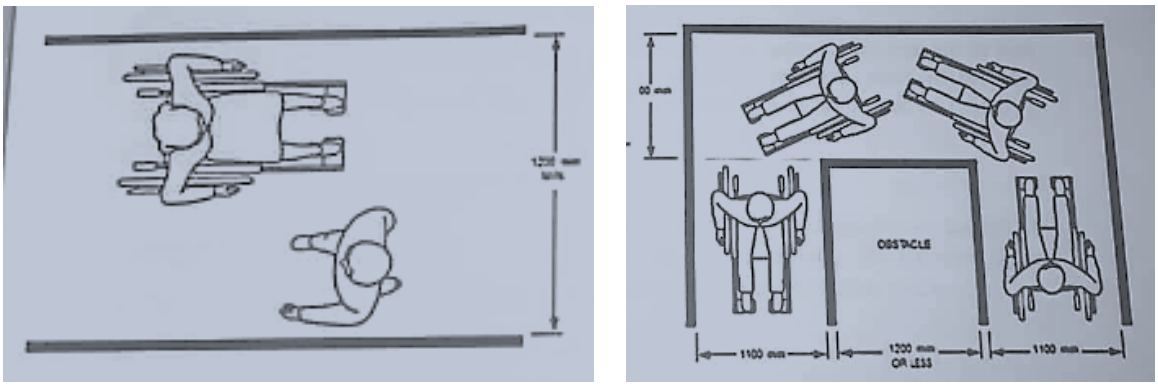


Figure 36 Circulation Space for the access of Wheelchair

Visual Angle Consideration

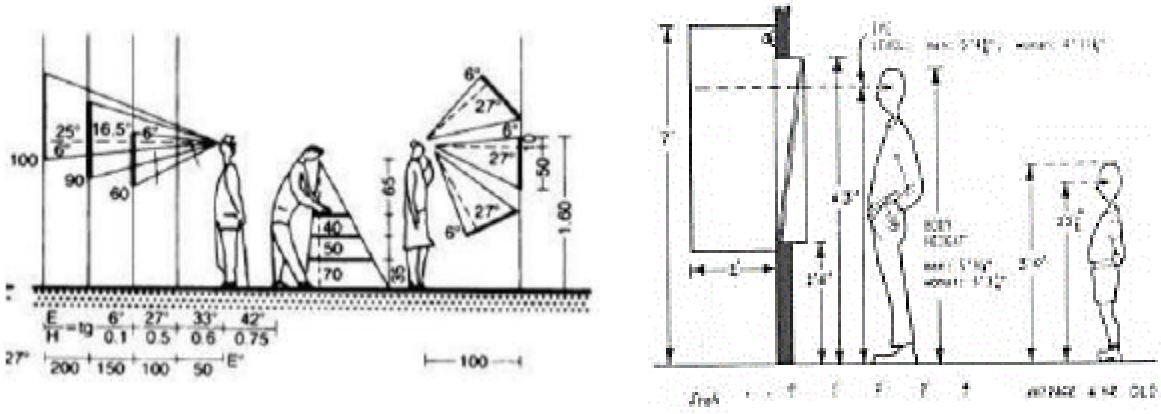


Figure 37 Viewing Angle and Height
Source: Neufert Architects Data

Lighting Consideration

1. Natural Lighting

Natural Lighting can be provided by means of side lighting or by provision of skylights. Both the side lighting as well as sky lighting has advantages as well as disadvantages.

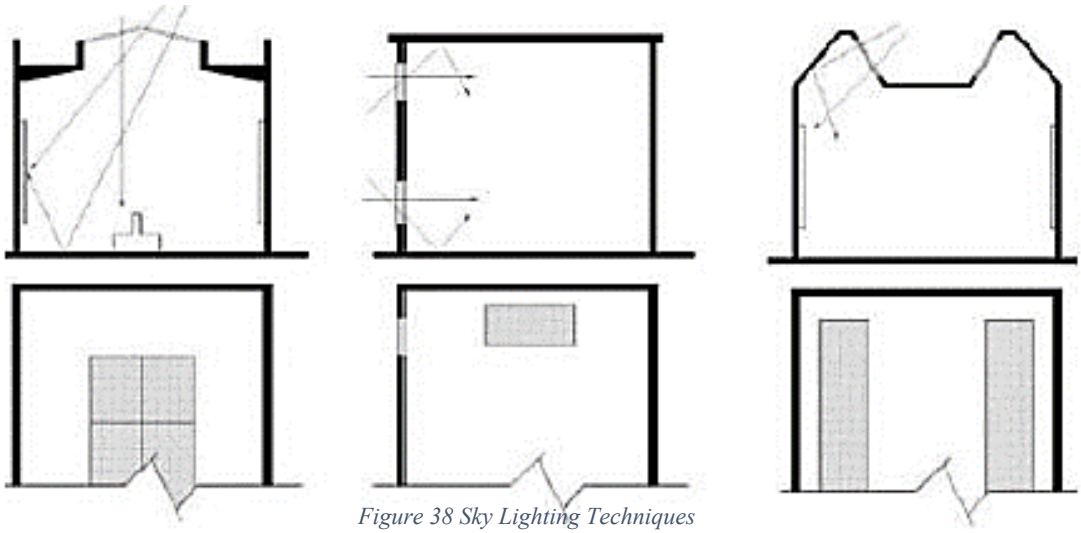


Figure 38 Sky Lighting Techniques

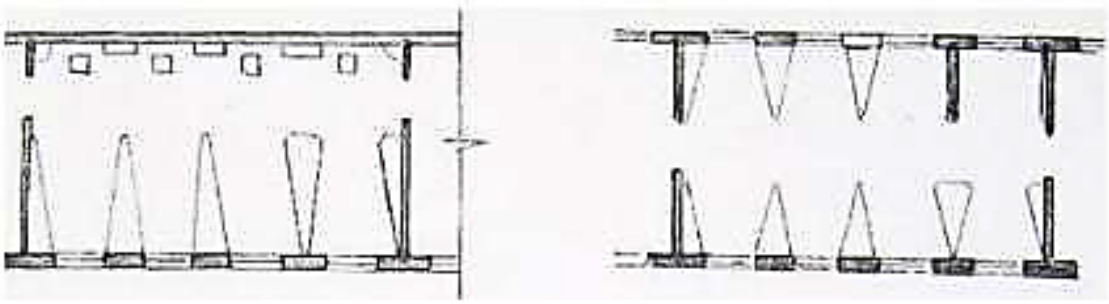


Figure 39 Gallery Side Lighting

2. Artificial Lighting

To accommodate changing displays, the lighting design should be flexible. This can be achieved with track-mounted lights which can be easily adjusted.

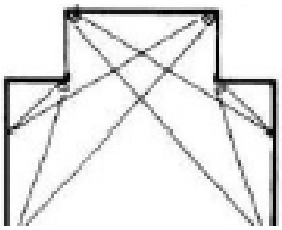


Figure 40 Spotlight in Gallery

Figure 41 Adjustable Spotlight

Artificial lighting in gallery space generally uses the two terms 'Room Lighting' and 'Exhibit Lighting'.

- Room Lighting:
  - It is provided by 'Diffuse Lighting' technique.
  - It is used for illuminating room zones and objects from a surface that radiates light in all directions.
- Exhibit Lighting:
  - It is provided by 'Directional Lighting' technique.
  - The light beam falls directly onto the objects to be illuminated by striking light at an angle defined by the geometry of lighting arrangement.
  - They need to be supplemented by softer room lighting luminaries.
  - They can be combined for a stimulating spatial experience in gallery spaces.
  - In directional lighting, shadows are created when they strike on an art piece having irregular surfaces. This helps to enhance the visual impact of a three-dimensional surface.

The artificial lighting solutions used in a gallery space as are as follows:

- Luminous Ceilings
  - Tubular fluorescent lamps are used to imitate natural day lighting.
  - They are suitable for 6m high ceilings.
  - They are not suitable for lower ceilings because they can occupy large field of vision.
- Cove Lighting
  - They provide additional brightness in diffused form.
  - Indirect source of light in coves.
- Wall washers
  - They can be directional or diffuse type.
  - They are flushed with ceilings and reflectors.
- Indirect luminaries
  - They are suspended luminaries radiating light in upward.
  - They are suitable for spaces where no daylight occurs.

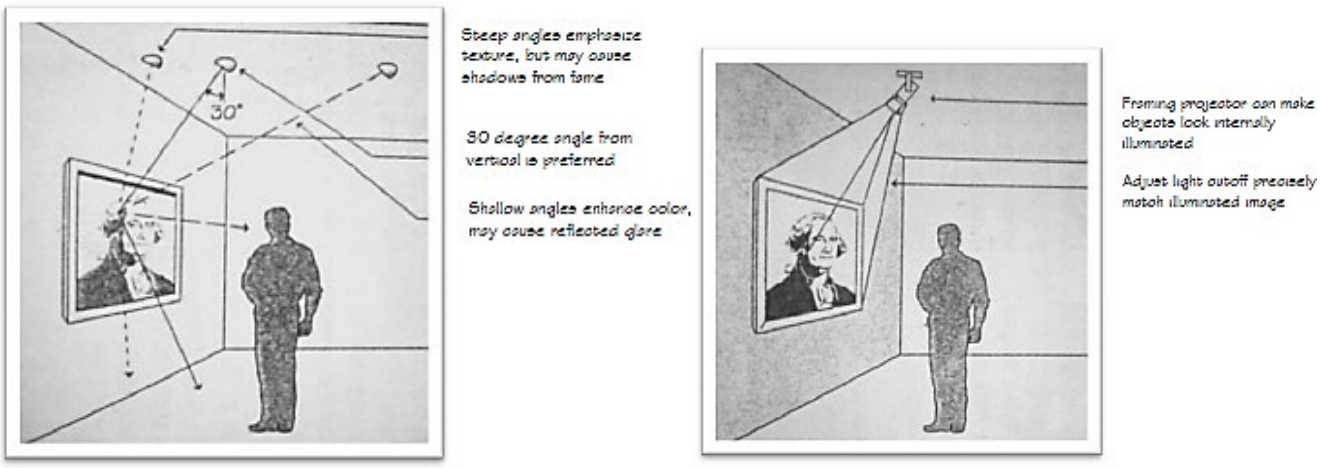


Figure 43 Two- Dimensional Lighting

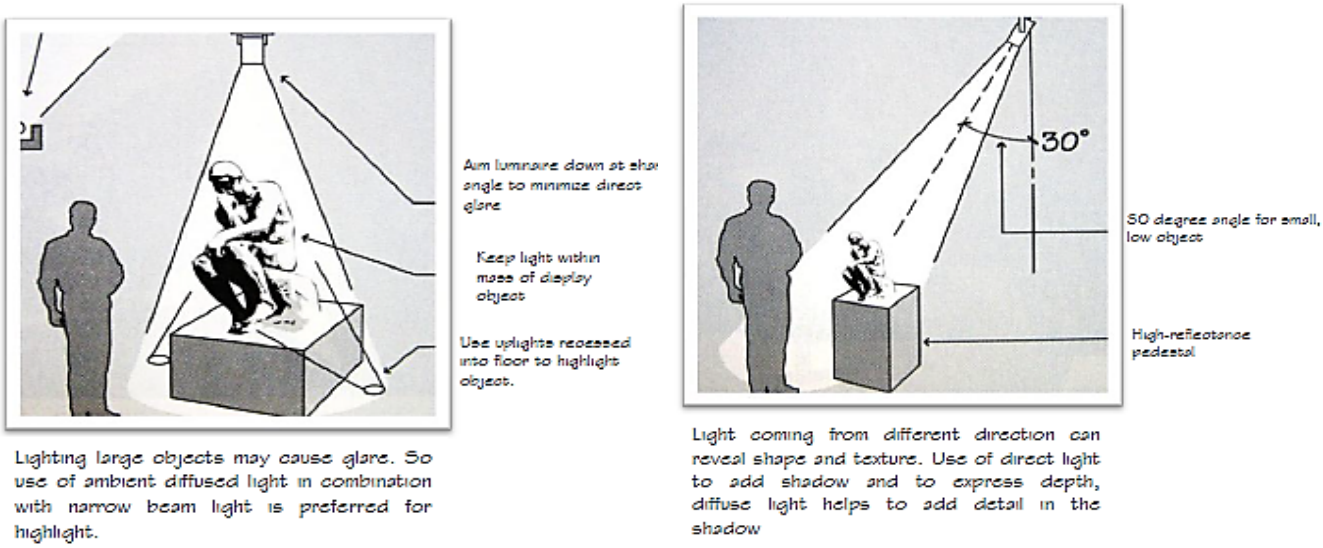


Figure 42 Three- Dimensional Lighting

Table 5 Different Spaces Illumination

S.N.	Spaces	Illumination
1.	Classroom & lecture room(desk)	300 LUX
2.	Laboratories	400 LUX
3.	Art room	600 LUX
4.	Work shops	600 LUX
5.	Libraries	400 LUX
6.	Offices	450 LUX
7.	Staff room	250 LUX
8.	Staircases	100 LUX

Source: Illuminance - Recommended Light Level

Table 6 Thumb Rule for Viewing

S.N.	Ceiling Height	Approx Distance
1.	8’	22”
2.	9’	24”
3.	10’	30”
4.	11’	36”

3.3.2 Souvenir Shop

A gift shop or souvenir gift shop is a store primarily selling souvenirs relating to a particular topic or theme. The items sold often include coffee mugs, stuffed animals, t-shirts, postcards, handmade collections and other souvenirs. Gift shops are normally found in areas visited by many tourists. Shop layout guides product placement, directs customer flow, and defines the overall look and feel of store, so it deserves plenty of thought.

Design Parameters

The Shop space is to have an entrance of sufficient size (at least 1600mm in width), to not create a "pinch point" when in use by large numbers of customers entering and exiting, but of a size that does not in any way distract from visual impact. The space is to have a partially translucent façade, (preferably a one-way frosted glass material, Lumosity) to make movement and activity visible within the Shop environment; entrance graphic should work with this feature to maintain a level of translucency. All features and merchandise within the space should be set back at least 500mm from the façade. Materials and finished used must be natural materials from a sustainable source and match exact quality, finish and shade.

Planning and design of the shop should meet:

- Theme of the Shop
- Interior design layout plan
- Particular specifications of decorations and materials used

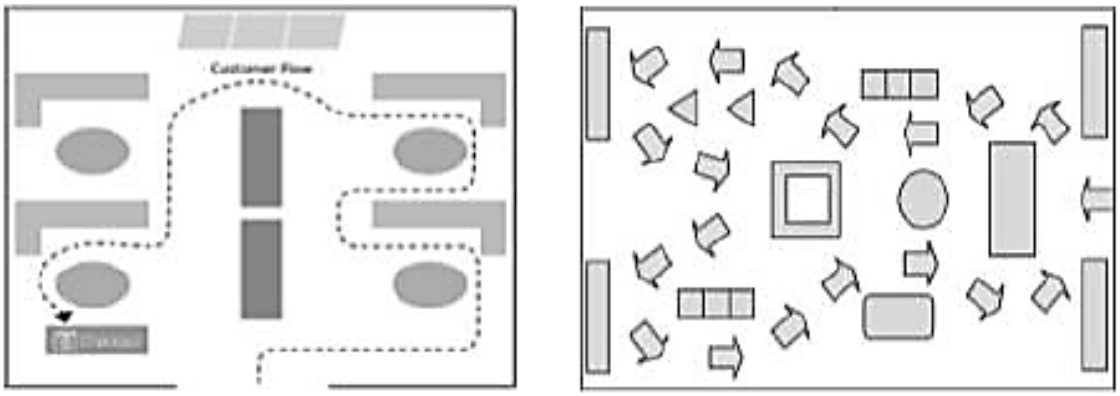


Figure 44 General Flow diagram of Shop

3.4 INFORMATION CENTER

3.4.1 Library

Library acts as a resource center for information and ideas serving as a tool to assist learning, teaching and research and offers hospitality to students, faculty members and visiting students.

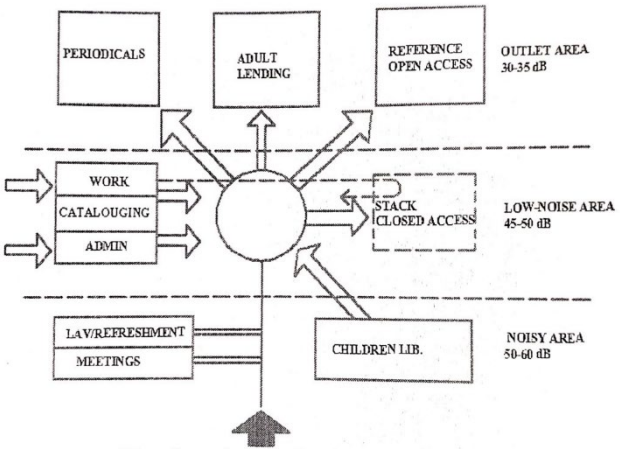


Figure 45 Functional Diagram of Library
Source: Neufert Architects Data

It has to be located in close visual proximity to the entrance for the security reasons. Space for bibliography and catalogues and heavily used be readers and staff it is also a social meeting place for students. Direct communication of the region to both shelving the books supply area is needed.

A library can be planned on the basis of following guidelines:

- Area allocation
- Lighting
- Indoor air quality

1. Area allocation

Determination of service population:

A projection of the needs of the design (service) population for 20 years is the start of the library design process. This design projection will allow the library to serve the future needs of its population of users and allows the designer to determine the space needed for the preceding categories of library spaces.

Collection space:

For a public library collection space can be allocated as 10% sq. ft. area of total volumes of book. i.e., for 30,000 volumes of book allocate 3,000 sq. ft. of floor area for stacking and collecting books.

Space need for user seating:

In general, public libraries should provide at least 5 seats for every 1,000 users in its service population.

Space need for staff work area:

In general, 130 sq. ft. of floor area is allocated for each work area in a public library.

Space need for electronic workstation space:

Per PC user 15 sq. ft. area is needed for digital library.

2. Lighting in Library

- Maximum utilization of natural light.
- Library is a sensitive space for light where every part has to be provided with appropriate lighting intensities.
- Bookshelves should be protected from daylight.
- Sensitive materials should not be exposed to a level > 50 lx.
- Non-work rooms need 100-300 lx, stacks need 150-300 lx. office and administration part need 250-5001x, and reading rooms without individual lights need 300-850 lx.

3. Indoor Environment

- The recommended temperature for reading rooms and open access areas is22°C in summer and 20°C in winter, with 50-60% relative humidity and six or seven air exchanges per hour.
- Adequate natural light and ventilation and properly designed indoor gardens can be the solution to solve the problems of respiratory and mental disease of library users.

General Requirements:

- The area required for simple reading/work place is 2.5 m², for a PC or individual work place, >= 4.0 m² is needed.
- In general condition, the width of shelf is normally taken 250mm (single sided) and 500 mm (Double sided). Bookshelves are available in 750mm, 900mm and 1000mm lengths. Circulation routes should be > 1.2m wide and clear spaces between shelves at least 1.3-1.4m wide. (Architect's Data)
- Space for books: 15 books per sq ft.
- Space for staffs: 100 sq ft per staff member. Reading rooms 20-35ft² per user
- Space for group meetings: this space can be used for conference, audiovisual equipment's: 7 to 10 sq ft per seat. (Architect's Data)
- For Art Library (excluding oversize)
  - Volumes per foot: 7
  - Volumes per single: 147

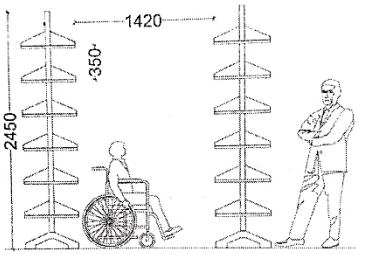


Figure 46 Shelves and Furniture Dimension
Source: Neufert Architects Data

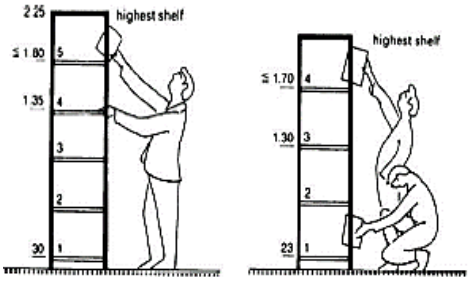


Figure 48 Height of the shelves required

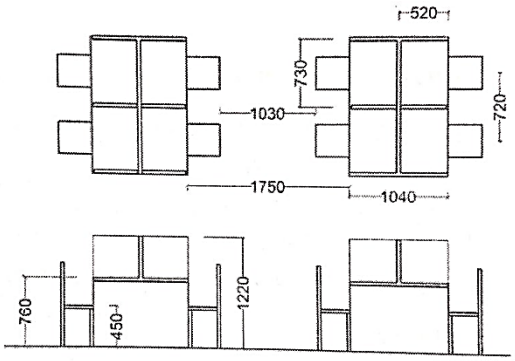


Figure 47 Dimension of the Furniture

Source: Neufert Architects Data

3.4.2 Meeting / Conference Hall

Conference room should be centrally located to the user. Interior spaces are more desired for such purposes. This helps to eliminate outside distraction and the needs for window coverings during visual presentation. The access should be through corridors or through reception areas.

Size

The conference room should be designed to accommodate average attendance, extra chairs can be provided for additional seating.

- Conference rooms - 1.39 m² per person
- Lighting requirement: 300 to 400 lux

Common room setups for conference

- U-shaped or Open-Eyed Style
- Theatre and Auditorium Style
- Conference or Board room Style
- Banquet Style or Rounds

Classroom Style

- Used primarily for presentation in which participants must work with the information they are presented.
- Generally, 6-8 ft. long and 18-30 inches wide tables are used. 2-3 people per 6ft. table and 3-4 people per 8ft. table. The benchmark is 14-16 sq. ft. /person for 18" table setup and 16-18 sq. ft. /person for 30" table setup. - Hollow Square Style

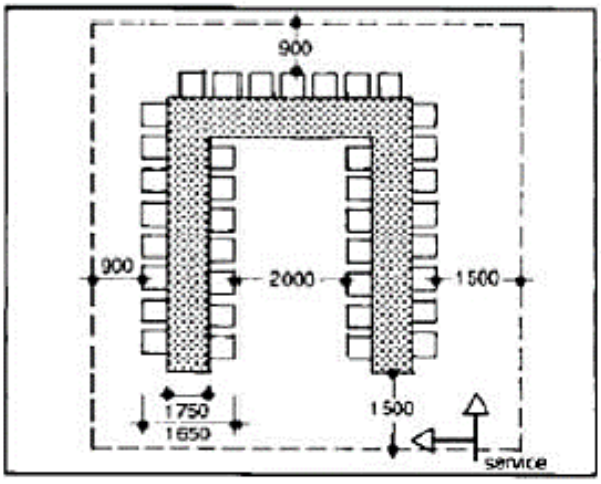


Figure 49 Space required for Banqueting for 37 people

Source: Neufert Architects Data

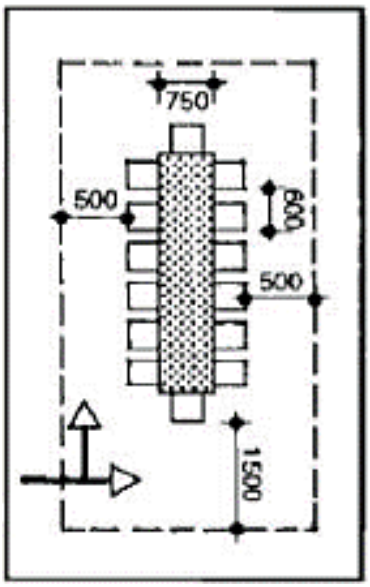


Figure 50 Space required for Banqueting for 14 people

3.5 PERFORMING SPACES

In Traditional Newari Settlement, Dabali, Courtyards and Squares were the major public performing spaces. Dabali is a raised platform of about 2' from the ground level. Square or rectangular in shape. Built near temples in squares or inside royal places and used as open-air stages, Dabalis were where the first theatrical tradition started.

Types of Performance-Audience Arrangements

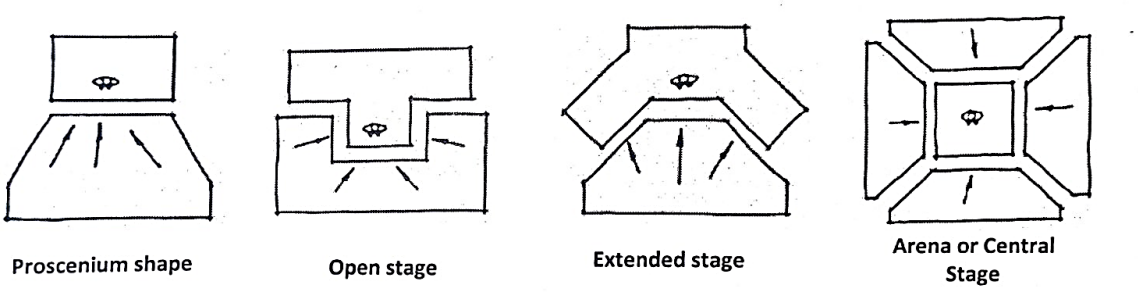


Figure 51 Basic forms of seating

In Proscenium shape, audiences are arranged in only one direction; in Open Stage, the audience surround from three sides. In Extended stage, multiple scenes may carry on at a time in side stages and in central stage. In Open Stage, stage is surrounded by seating in all four sides. Proscenium shape is the most widely recommended in design.

3.5.1 AUDITORIUM

An auditorium can be divided into three major parts:

- Front of House- entrance, foyer, lounge, toilets, and cloak room.
- Seating
- Stage and stage support- stage, backstage, green room, changing, rehearsals, technical rooms, store, and preparation.

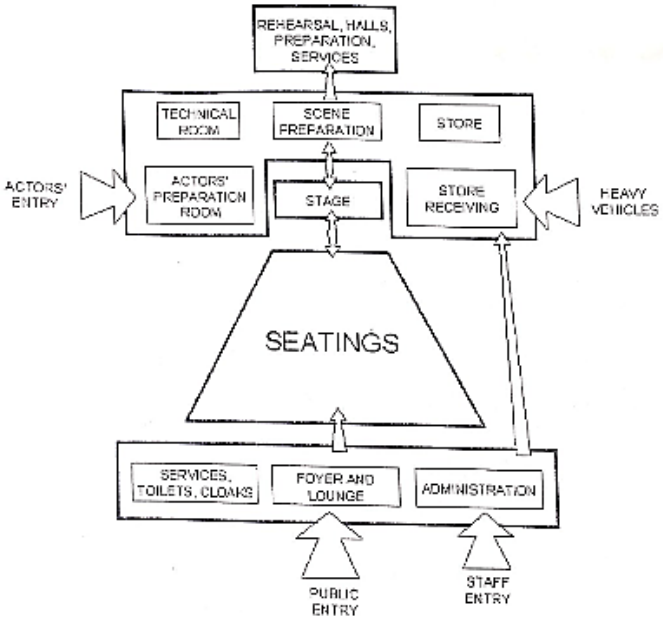


Figure 52 Functional flow diagram of Auditorium

1. Front of house

The Foyer is a large hall so it may be used as a multipurpose hall or exhibits can be displayed as the gallery space. Lounge area must be specified to accommodate VIP's.

- Foyer Space= 0.4-0.5 m² per seat inclusive of vestibules, gallery, and lobby.
- Toilets (ladies and `gents) = 1WC, per 100 seats according to standards
- Cloak Room= 3 m² -5 m² per 100 seats

2. Seating

Seating is the major part in design of an auditorium. Various factors are considered while designing the seating arrangement in an auditorium. Seating capacity is also a measure for

determining size of the hall. Size of all services and spaces in the auditorium is determined with some standards relating to the capacity of the hall itself.

Classification of Hall According no. of seats accommodated:

- Very large = 1500 or more seats
- Large = 900-1500 seats
- Medium = 500-900 seats
- Small = Under 500 seats

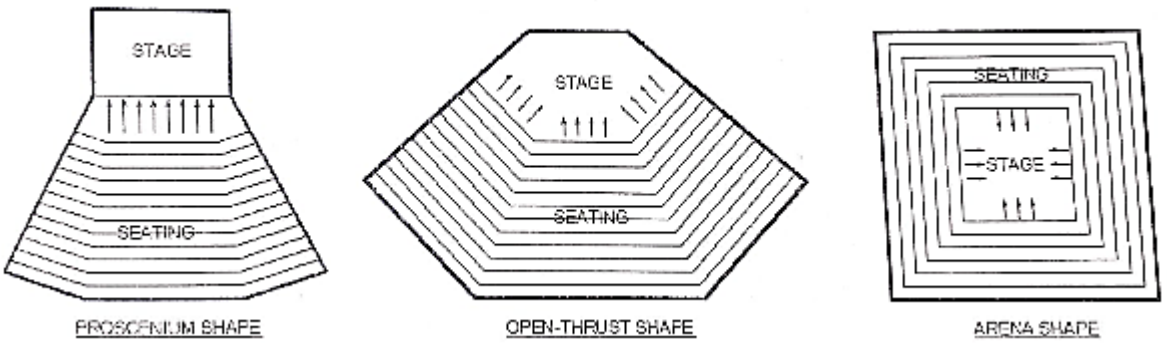


Figure 53 Basic Forms of Seating

There are 3 basic forms of seating that are prominent according to the direction to which the audiences are oriented.

- **Proscenium shape**-audiences are arranged in only one direction
- **Open-Thrust shape**-audiences surround the stage from at least three sides
- **Arena shape**- the stage surrounded by audiences in all direction

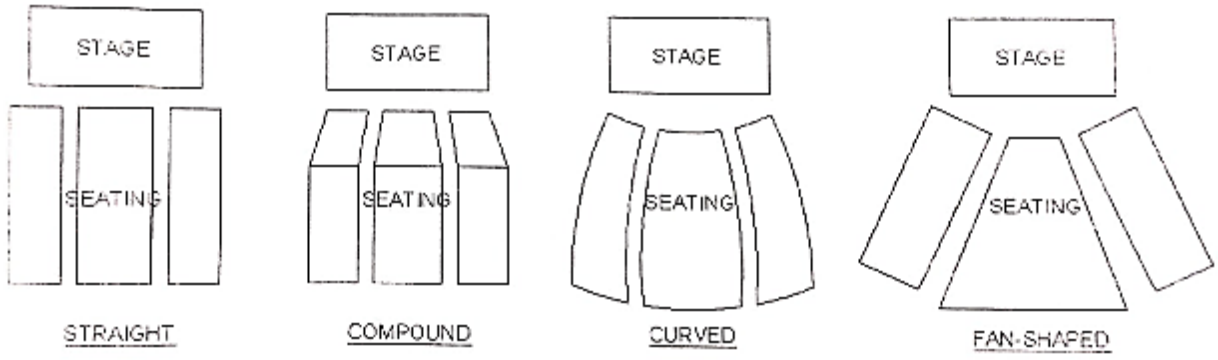


Figure 54 Types of Seating Layouts

Generally, Proscenium shape with fan-shaped seating is taken as ideally best one in auditorium design.

Visual limits for the performer and Audience

For a perfumer, there is a limit to the distance at which he can project his performance and hold his audience. The usually accepted maximum is 20 m from the geometrical core for an open stage or from the setting line of a proscenium stage. For musicals and opera, in

which facial expressions are less important, the distance can be increased up to 30m. If it is necessary most of the time for performers to be seen against a background of special scenery, as in the conventional proscenium theatre, the sight lines and maximum distance from the performer restrict the number of audiences it is possible to fit in. The number of people inquired to be accommodated in the auditorium should not be the sole criterion for selecting the width of proscenium opening.

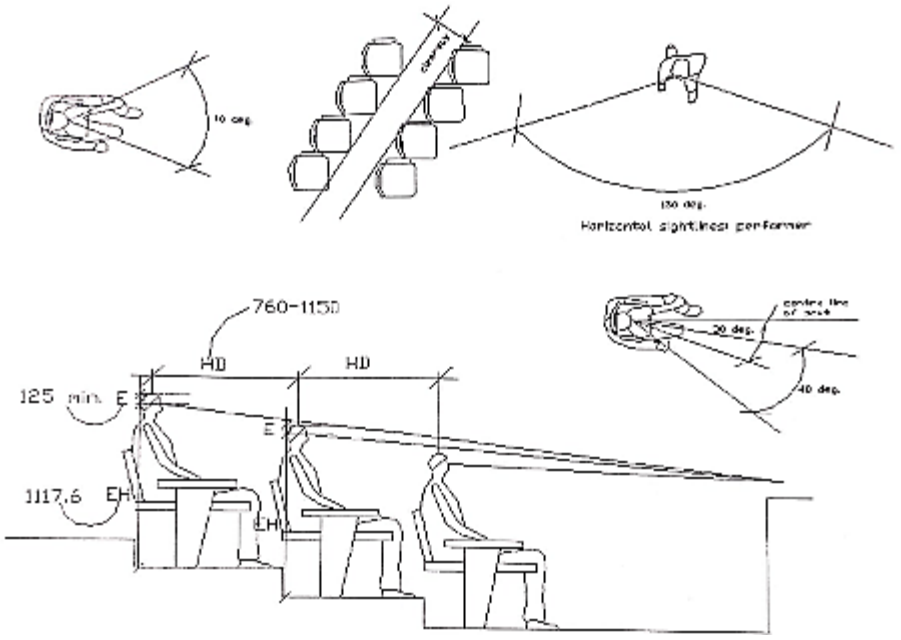


Figure 55 Visual Limit

Acoustic Consideration

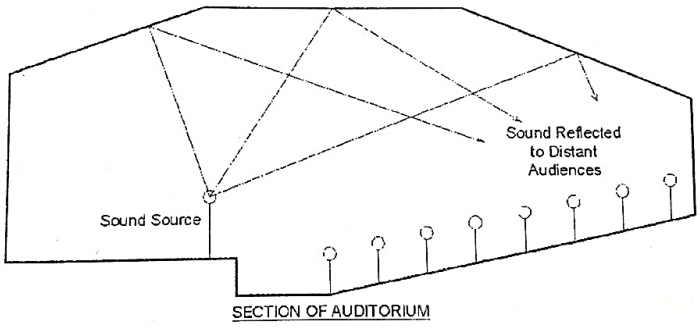


Figure 56 Sound reflection in Auditorium

Auditorium should be separated with partitioning walls of approximately 85dB 18-20000Hz. Acoustic deflecting surfaces on the ceiling with low acoustic delay difference time. The reverberation time can increase with increasing room volume and decreases from 0.8-0.2 seconds from low to high frequencies. The rear wall behind the last row of seats should be sound absorbent to prevent echo. The loudspeakers should be distributed around the auditorium so that the volume difference between the first and last row of seats does not exceed 4dB (Neufert 3rd edition).

Stage and Stage Supports

A stage should be flexible to allow easy movement for heavy stage equipment. For such flexibility larger wings to the sides of the stage are preferable. The stage may be equipped

with many types of machinery such as tracks and cranes for camera, different fighting equipment etc. However, there are various support spaces required for stage.

1. Stage Preparation

Stage preparation areas must be allocated besides the stage so that the equipment for stage, for example properties for drama performance can be set and transported easily to the stage. The space should provide as a green room for performers to wait till stage going without disturbing technicians to prepare for the stage.

2. Stage Height

The space above the stage is called stage tower. The vertical extension of the space facilitates room for stage lighting, curtain and vertical storage of sceneries. The elaboration of the methods of changing scenery depends upon the prospective use of the building. Scenery can be moved in and out of the view of the audience vertically above by using a flying system and vertically below by using lifts. It can be moved horizontally to the sides and rear on movable stage sections or rotated on revolves.

3. Stage lighting

Stage lighting installation must make provision for lighting any part of the stage from as wide a range of angles as possible. Some light must come from the general direction of the audience. The source need not always be in the auditorium itself. When the actor is downstage close to the audience, some lighting positions must be in the auditorium.

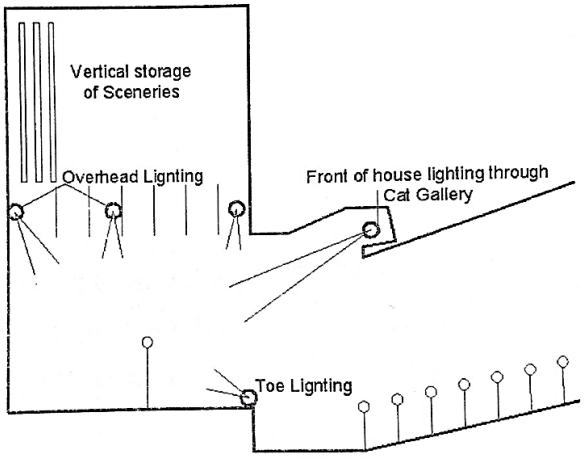


Figure 57 Lighting in Stage

Spotlights are rarely directed straight at actors, but are usually crossed. All lighting positions have to be reached so that individual units can be directed, focused, color filters changed and the fittings maintained.

4. Control Rooms

The best position for the operator of the lighting control board is in a control room in the auditorium with an observation window allowing him an unrestricted and undistorted view of the stage, wing to wing and floor to borders. The floor level of the auditorium should be arranged so that the operator's view is not obstructed by any member of the audience standing or sitting in front or by the overhang of the balcony.

The control room houses the lighting console and the operator and needs space for writing the lighting plot, storage and maintenance activity. A space 3 m x 2.4 m should be allowed and it can change as per the size of the equipment. The normal access to the control room should be outside the auditorium and preferably separate from the public areas, but the door direct into the auditorium is desirable for rehearsal. There should be an easy

connection from the control room to the stage and dimmer room and any associated data stores without having to go through the auditorium. The sound control should be situated near to the lighting control room, but it has different requirements and is better separated and sound insulated from it.

5. Rehearsal Room

A rehearsal room is where the whole team prepares a drama, opera, or a dance. The rehearsal in the auditorium is also used as a workshop to conduct classes for any production. Its dimension must be related to the size of the stage upon which the production will eventually appear.

6. Changing

Separate changing space for male and female performers should be provided which is directly accessible to the stage and the rehearsal. Changing spaces should provide ample spaces for toilet. bathrooms, and lockers too.

7. Projection Room

Where a film projection is included the question of its relation to the control rooms must be considered.

8. Store, Production and Maintenance

Large storage spaces must be allocated which must have direct access for heavy vehicles so that heavy stage equipment and properties can be shipped without any difficulty. Separate storage space should be provided for special equipment and materials such as musical instruments. dresses, etc. Production of various stage properties are done at the auditorium itself so production area must also be arranged. The production area is generally laid out as a carpentry workshop since much of the work is done with timber products. Maintenance may also be carried in the same workshop. So, these spaces, Store, Production, and Maintenance must be planned in proximity for better functioning.

3.6 RESTAURANT AND FOOD COURT

Restaurant Types and Space Allowance

- Specialty restaurant: 2 m²/person)
- Snack bar service: 1.5-2.2m²/person.
- Cafe service: 0.83-1.5m²/person
- The desirable spaces for receiving are 5%, for food storage 20 %, preparation 14%, Cooking 8%, baking 10%, ware washing 5%, traffic aisles 16%, trash storage: 5% employee 15%, Miscellaneous 2%

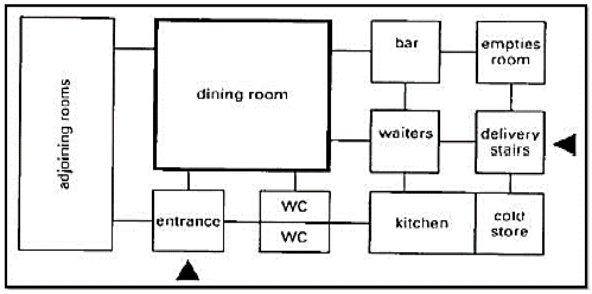


Figure 58 Functional Layout for small Restaurants

Source: Neufert Architects Data

- A minimum passage area is 18 in. between chairs and, including chair area; tables should be spaced 4 to 5 ft.

Traffic Aisle

- min 30" (without difficulties)
- min 42" combined work (one person to pass & another person at the work place)

Design Issues Standards and Space Requirements

- Ceiling height of a dining room should relate to the floor area: <=50 m²; 2.50m; 50 m², 2.75m; 100 m²>=3.00 m above
- Minimum width of escape routes is 1.0 m per 150 people.
- The window area should be greater than or equal to 1/10th of the room area.
- A square table has to be minimum 60m wide and 40m deep for a person to eat comfortably and for round 6m diameter.
- Minimum width of service aisle: 0.9-1.35 sq. m.
- Waiter station: 1 per 20-30 seats
- Dining area per seat: 1.5-2.15 sq. m.
- Kitchen area per seat: 0.4-0.6 sq. m.

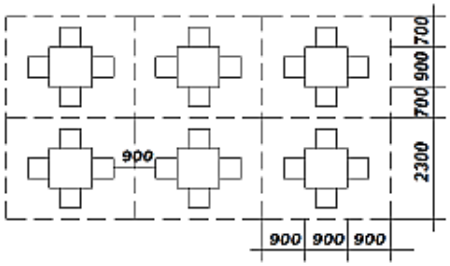


Figure 59 Restaurant Seating Space Requirements

Source: Neufert Architects Data

dining floor area	walkway width
up to 100 m²	≥ 1.10 m
up to 250 m²	≥ 1.30 m
up to 500 m²	≥ 1.65 m
up to 1000 m²	≥ 1.80 m
over 1000 m²	≥ 2.10 m

⑧ **Walkway widths**

customer places	toilets men	toilets women	urinal bowls	urinals (m)
50	1	1	2	2
50–200	2	2	3	3
200–400	3	4	6	4
400	– determine in individual case –			

⑨ **Toilet facilities**

The minimum width of escape routes is 1.0m per 150 people. General walkways should be at least 1.10 m → ⑧, with clearance heights ≥2.10 m. The window area should be ≥ 1/10 of the room area of the restaurant.

type	chair occupancy per meal	kitchen area required (m²/cover)	dining area required (m²/seat)
exclusive restaurant	1	0.7	1.8–2.0
restaurant with high seat turnover	2–3	0.5–0.6	1.4–1.6
normal restaurant	1.5	0.4–0.5	1.6–1.8
inn/ guesthouse	1	0.3–0.4	1.6–1.8

approx. 80% supplement is added for storage rooms, personnel rooms etc
cover = seat × no. of seat changeovers

⑩ **Floor area requirements**

tables	seats	waiter service (m²/seat)	self service (m²/seat)
square	4	1.25	1.25
rectangular	4	1.10	1.20
rectangular	6	1.05	1.10
rectangular	8	1.05	1.05

⑪ **Total space requirements for dining rooms: 1.4–1.6 m²/place**

main aisles	min 2.00 m wide
intermediate aisles	min 0.90 m wide
side aisles	min 1.20 m wide

⑫ **Aisle widths**

Traditional restaurant

- Restaurant with traditional food serving facilities giving the sense of traditionalism are the traditional type restaurant.
- Visual display to costumers
- Opportunity for waiters to show skills
- Helps increase popularity of restaurant
- Use of traditional elements such as: Lights, decks and furniture, structural elements

3.7 SERVICES

3.7.1 Washrooms

Table 7 Men's WC Number

Number of Men	Number of Water Closets	Number of Urinals
1-15	1	
16-20	1	1
21-30	2	1
31-45	2	2
46-60	3	2
61-75	3	3
76-90	4	3
91-100	4	4
Over 100	4	4 plus 1 closet for every 25 people (or fraction of 25) in excess of 100. Every fourth additional closet may be replaced by urinal

Table 8 Women's WC Number

Number of Women	Number of Water closets
1-15	1
16-30	2
31-50	3
51-75	4
76-100	5
Over 100	5 Plus, on additional closet for every 25 people in excess of 100

Source: (Shakya, 2011)

Washroom for Differently Abled

- In any public rest room, at least one compartment for each sex should be accessible to an ambulant disabled person.
- Accessible rest rooms should be marked with the international symbol of accessibility. No indication is needed if all rest rooms are accessible.
- Pivoted doors should open outward unless sufficient space is provided within the toilet stall(*Accessibility Design Manual : 2-Architechture : 10-Rest Rooms*)

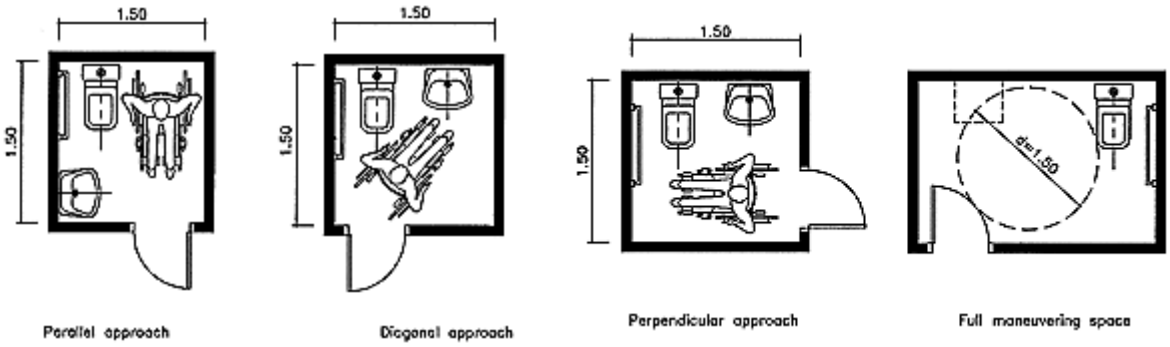


Figure 60 Washroom for Differently-Abled
Source: Neufert Architects Data

3.7.2 Ramps

- Minimum width is 1.7m and flight length should not exceed 6.
- Maximum angle of ramp is 6 degrees

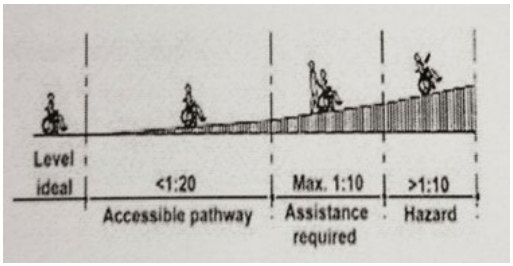


Figure 61 Ramp Ratio

3.7.3 Corridor

Wide corridor is useful for wheelchair users, services equipment users, and services equipment, high traffic area, etc. Change in surface level of more than 13mm should be ramped. Floor surface should be non-slippery and even. Carets should be securely fastened.

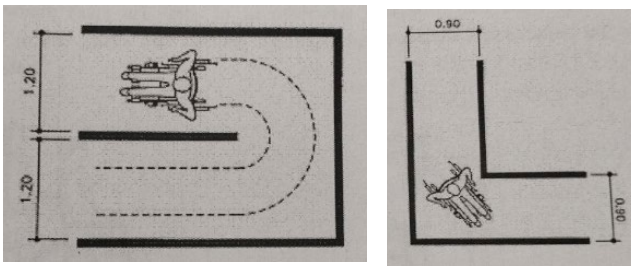


Figure 62 Corridor Design for Differently-Abled

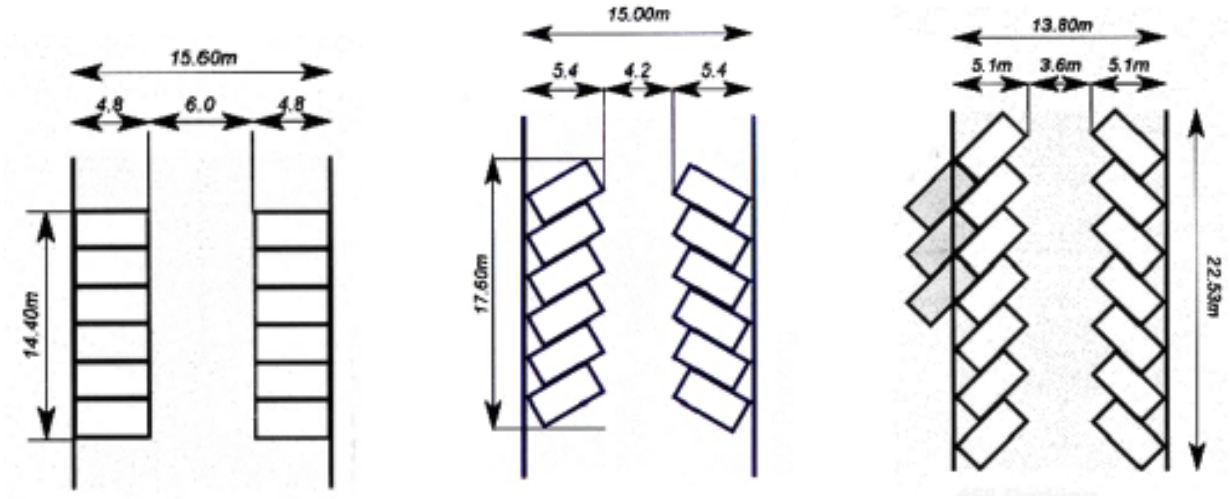
Source: Neufert Architects Data

3.7.4 Stairs

Differences in level should be illuminated or minimized as much as possible for the comfort of disabled people. A complementary ramped route, elevator or lift should be designed. Circular stairs and stepped landings should be avoided. Open risers are not recommended.

3.7.5 Turning and Parking

The type, size and shape of a turning and parking place in a road depend on the road use in that particular area and the size of the vehicles. Separation of moving and stationary traffic is necessary due to the growth of the transportation.



90° Parking 60° Parking 45° Parking

Figure 63 Typical Parking Layouts
Source: Neufert Architects Data

Space requirements

- 90° parking = approx. 20 m²
- 45° /60° parking = approx. 23m²
- 45° /60° oblique spaces, easy entry/exit parking space, for one way traffic 90° entry/exit to parking. space, for two-way traffic parking space needs small parking.

TURNING RADIUS:

Table 9 Turning Radius

Types of vehicles	Length (m)	Width (m)	Height (m)	Turning circle radius (m)
Motor Cycle	2.20	0.70	1.00	1.00
Car	4.70	1.75	1.50	5.00
Bus	11.40	2.50	3.30	6.50

Source: Neufert Architects Data

4 CHAPTER-IV: CASE STUDY

4.1 RUSSIAN CENTRE FOR SCIENCE AND CULTURE

4.1.1 General Introduction

Figure 64 Russian Cultural Centre

- **History** : Established in 1979 as library, Shift to current location in 1991
- **Location** : Kamal Pokhari, Kathmandu
- **Ownership** : Russian Embassy
- **Components** : Offices, Auditorium, Conference Hall, Library, Exhibition Spaces
- **Activities** : Diplomatic meetings, Exhibition, Cultural programs, Film festivals Language classes, Workshops
- **Objective:**
  - Study of medium size auditorium conference hall and exhibition space
  - Study of natural lighting in exhibition space
  - Study of the spatial requirement, circulation pattern and relation among function

4.1.2 General Study

- Entrance followed by spacious double height used as exhibition space
- Skylight and attic windows create an interesting and vibrant interior in the foyer
- Fan shaped auditorium with slightly curvilinear seating
- No separate space design for exhibition
- Double height with acoustic treatment
- Library is single hall with reading and reception
- Interplay in level of spaces
- Foyer acting as connecting spaces

4.1.3 Space Analysis

1. Gallery

- Central foyer (12m*17m) surrounded by the wide corridor used as the gallery space.
- Curvilinear staircase adds to the aesthetic of gallery
- Well-lit by use of sky lighting and provision of artificial focus lights for the artworks.

2. Exhibition Space

The central entrance foyer and the wide corridor on the first floor are used as an exhibition space. The admittance of sufficient natural lighting and the feeling of openness make the exhibition space lively.

3. Conference hall

The conference hall of Russian Culture is a 50 seated audio-visual hall. The total area of this hall is 84 sq.m (10.5m x 8m). The area has the capacity of 1.68 m²/person. The conference hall is double height with proper acoustical treatment on wall floor and ceiling.

4. Auditorium

It is fan shaped and the seats are arranged in a slightly curvilinear pattern, is a small one with 191 seating capacity. There is a good provision of fire escape and fire hydrants are used for fire safety. AC system is used for the mechanical ventilation. There are altogether ten rows of seats. The width of each seating step is 3'-6" and height being 1'-2". The distance from to first row from the stage is 7'-10". Width of the gangway is 3'-6". There is an efficient circulation pattern with multiple entry and exits.

Figure 65 Auditorium

5. Library

- Double height room hence though small but seems spacious
- Windows towards east provide natural lighting in the room
- Back stacks provided along the periphery of room so no obstruction to the reading spaces
- Effective library layout with pockets for individual reading area provided by offsets in plan and also there is space for group reading.

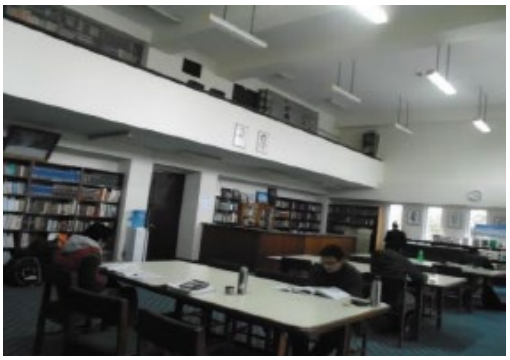


Figure 66 Library

6. Upper Gallery

It is a 3m wide corridor used as a gallery space which is also used for exhibition purposes.

7. Office Spaces

It is located on the ground and first floors. There is provision of back entries to offices in the ground floor.

4.1.4 Building Analysis

1. Acoustical Treatment

- Floor – carpeted, Wall- ceramic tiles used as a sound reflector up to the height of 1.2m
- Wooden battens with the gap beneath which are layer of wire mesh and glass wool

Figure 67 Acoustical treatment

- Ceiling- undulating surface with reflective surface
- Use of perforated gypsum board on the ceiling as well as on the wall of stage for sound absorption
- Thick paneled door for better sound insulation.

2. Circulation

There is an efficient circulation pattern with multiple entry and exits. Multiple entry to different functions, main entry leading to entrance foyer, side entry to classrooms and also back entry to office spaces.

Figure 68 Staircase

3. Lighting

- Circular skylight and other day lights in entrance foyer creating interesting and large interior space

4.1.5 Space Experience and Interaction

The wide-open entrance space along which parking is allocated gives the feeling of a public space rendered with greenery all around. The main entry of building leading to double height foyer is the transition of space from open sky (Big volume to smaller), then to the smaller rooms (smaller to tiny). The sky lit exhibition foyer gives a sense of open to sky space within a closed boundary. The flow system is well organized in the lobby and foyer which also acts as the main interactive space making the center livelier and interactive.

4.1.6 Interpretation of Spaces

Hierarchy of spaces maintained in various split levels under one roof makes the spaces more useful and communicative. Multiple entrances to various functional spaces help minimizing the problem of congestion during program and also avoid disturbance to one function by the other. Movement around and within the building is clearly defined. The intrinsic properties of the building enhance its beauty and functionality whereas the extrinsic properties provide a clear hierarchy in spaces along with maintaining the environment around the building.

4.1.7 Inferences

- Multiple entrances to different functional spaces help minimize the problems of congestion during programs and also avoid disturbance to one function by the other.
- Efficient play of natural light in the spaces can create pleasing interiors cape and inviting interior environment for the users.
- Through the functional segregation of the spaces, the problems of confusion in movement can be reduced.
- The arrangement of functional spaces around a multifunctional foyer seems to be more effective in planning and also in space relationship.

4.2 POTTERY SQUARE, BHAKTAPUR

4.2.1 General Introduction

- Location: Bhaktapur, Pottery Square.
- Specialization: Pots, Utensils, Decorative, etc.
- Zone: Residential
- Architectural Style: Traditional with exposed brick and slope roof
- Objective:
  - To study spaces required by pottery making process
  - To study the machines and tools used

Figure 69 Family Involvement in Pottery Making

4.2.2 Building Analysis

1. Surrounding Context

The Pottery Square of Bhaktapur is a conserved traditional village, where the whole community is based on pottery making. The potters are called Kuma", a caste for potters. The whole family of Kuma is engaged in the workshop. The tradition is- the trade is handed down from father to son generation.

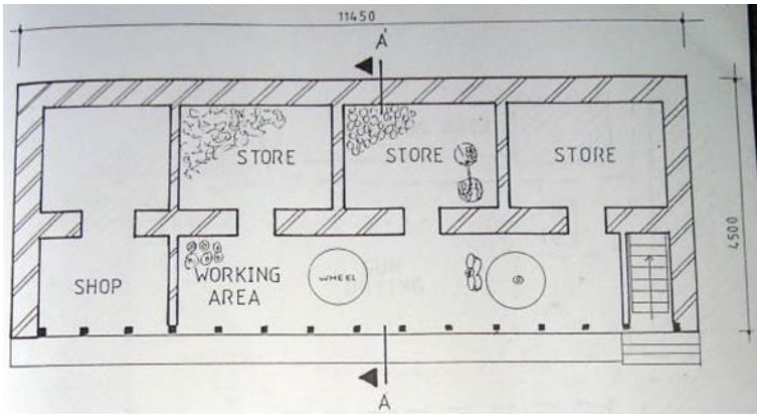


Figure 70 General Planning

2. Functional Study

- Most of the houses are 3 bay types, in ground floor
  - the front part is used for Potter 's wheel
  - the second part is used for storing
  - the third part is used for staircase
- Wall is made from mud mortar and brick exposed façade.
- Courtyards or separate room on the ground floor are used for kiln.

Figure 71 Traditional Potter's Wheel

Work is done in ground floor which opens to a courtyard or community gathering area. The upper portion of the house is used for residential purpose by the potters. Raw materials are stored on the ground floor, as it is damp and dark, which is good for storage. The squares are used for sun drying of pottery items. The crafts are either sold on the local souvenir shop or are taken to market.

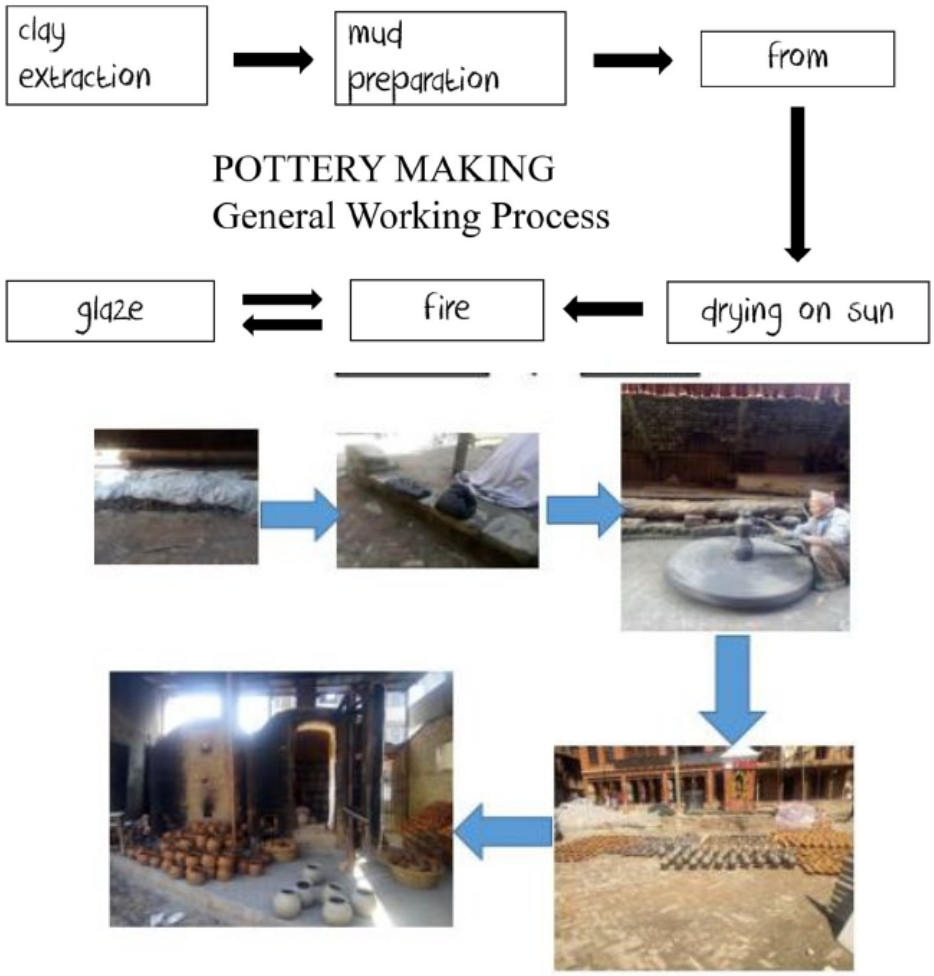


Figure 72 General process of Pottery making

3. Working Environment

Lighting and Ventilation:

- Workspace on ground floor, lights are through door openings thus found inadequate.
- Ventilation inadequate.

Thermal Environment

- As traditional houses are thermally comfortable, extreme temperature does not affect the workers.
- The kiln area produces smoke and dust which may affect the dwellers.

- Safety: In case the kiln is located inside the house, it can be dangerous if any fire breakout. Otherwise, kiln is isolated and made separate.

Machines and Tools used

- Potter 's Wheel (40k – 50k) & Turntables
- Shaping Tools (paddles, anvils, ribs)
- Rolling tools (roulettes, slab rollers, rolling pins)
- Cutting/piercing tools (knives, fluting tools, wires)
- Finish Tools (Burnishing stones, rasps, chamois)

Figure 73 Modern Kiln (Wood)

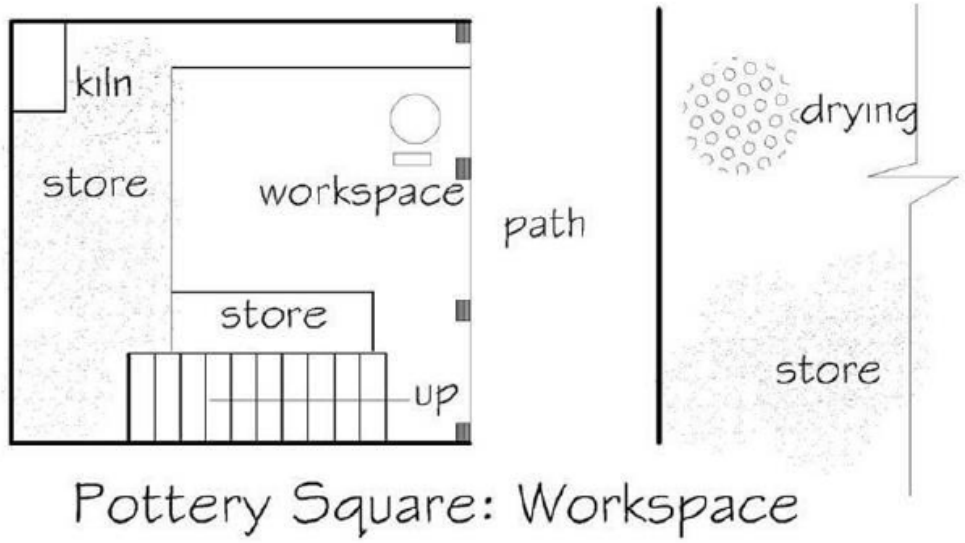


Figure 74 General layout Pottery Square Workspace

4.2.3 Inferences

- Congested workspace, work done in private space at the ground floor
- Natural light not sufficient in workspace, have to depend on artificial light
- Storage and workspace not separate have to depend on single room.
- Whole community is based on pottery, court spaces are shared.
- Dual function of courtyard helps to create calm and peaceful working environment.
- Separation of fire prone area such as kiln to decrease fire hazard.

4.3 NEWA LAHANA: Ode to Newari Cuisine

4.3.1 General Introduction

- Location: Thambahal, Kirtipur
- Established: 2064 B.S.
- Authority: Community
- Objective:
  - Cultural conservation, try to reveal old Newari community
  - One Newari Museum and restaurant where we can see Newari culture, civilization and delicious food and beverage

Figure 75 Newa Lahana, Kirtipur

About the project

In 2006 about 160 families of Thambahal Tole of Kirtipur, joined forces in a cooperative at the suggestion of some socially engaged citizens in order to develop their district into a classic example of Newari culture.

They have planned and realized an open-Air Museum which stretches along the narrow lanes where not only the old tools and appliances are displayed but also historic rites and rituals are explained in a vivid manner. The cooperative keeps historic rites and customs alive and takes care for the neediest persons by raising some small contributions for the support.

An open-air (Newari) restaurant has been erected on the top of the central prayer hall based on the financial contribution of all the families in the tole. Exclusively Newari food, prepared by the inhabitants are served in the restaurant called "Newa Lahana"- meaning "Newar culture". Since 2008 the restaurant is extremely well received by the people of the Kathmandu valley. The profit of the restaurant is for the benefit of the families of the Tole.

Figure 77 Restaurant space at top of center hall

Figure 76 Local people making beaten rice

Figure 79 Open Exhibit

Figure 78 Local people weaving sukul

4.3.2 Analysis

1. Objectives:

- Cultural awareness through tourism development.
- Employment targeted to the youth and householders
- Try to reveal the old Newari community

2. Function

It is a Newari restaurant which displays culture, people, Newari civilization and serves fresh and delicious Newari food and beverages.

3. Space utilization

- The whole area of the tole is a part of open museum.
- The exterior walls of the individual houses are used to display utensils and objects.
- The objects of displays are the objects used by a Newar boy or a girl from his/her birth to the death.
- The open spaces are used as the live display area such as making of straw mats, weaving, making of beaten rice etc. the things made by the people are either sold or used in the restaurant.

4.3.3 Inferences

- Cultural awareness through tourism development.
- Cultural conservation is possible when individual is benefitted from that culture.
- The management needs improvement.
- The objects of displays are not well managed.

4.4 NEPAL BHASA ACADEMY, KIRTIPUR

4.4.1 General Introduction

Figure 80 Nepal Bhasa Academy

It is an example of organization and project to promote Newari culture and literature. So, the study has been done to develop understanding about functions, events and interest of people in cultural activities and to derive need of such cultural center in present context.

- Location: *Nyama Sima,* Dev Dhoka, Kirtipur
- Building built: *Falgun* 26, 2063 B.S.
- **Objective:**
  - To study the basic requirements that it fulfills as a culture center.

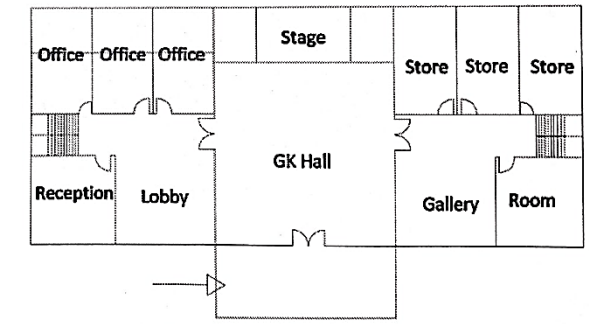
4.4.2 Building Analysis

1. Architectural Expression

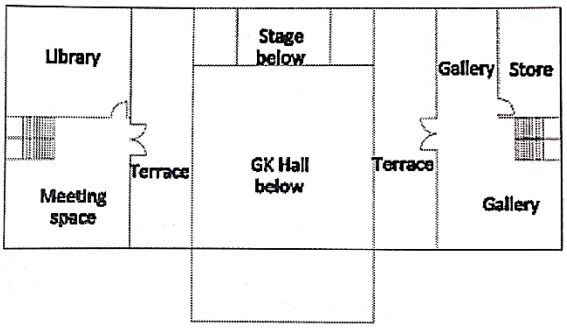
- Modern brick exposed simple building
- Newari expression achieved through slope roof above main hall and decorative timber doors and windows.

2. Space Planning

- Central Hall, two symmetrical wings on each side of the hall
- Ground Floor:
  - Main entry to G.K. Hall: 300 seats
  - Reception towards the left wing from the hall
  - 3 office rooms and 3 store rooms on the right wing
- First Floor:
  - Space above the left wing has a small library and meeting space
  - The right wing is the Araniko Dagoba Gallery
- Second Floor:
  - The terrace on the right wing leads to the FM station on the second floor



Schematic Ground Floor Plan



Schematic First Floor Plan

Figure 81 Schematic Floor Plans

4.4.3 Inferences

- Access should be easy, clear and visible.
- Building itself should express its purpose and its functional characteristics
- Supporting facilities such as parking, cafeterias, service areas should be sufficiently provided.

4.5 PATAN MUSEUM

Among the three historical Durbar Squares of extraordinary cultural and architectural heritage of Kathmandu Valley, Patan Durbar Square is one of them that also still serve magnificently the modern-day necessity of an urban scape.

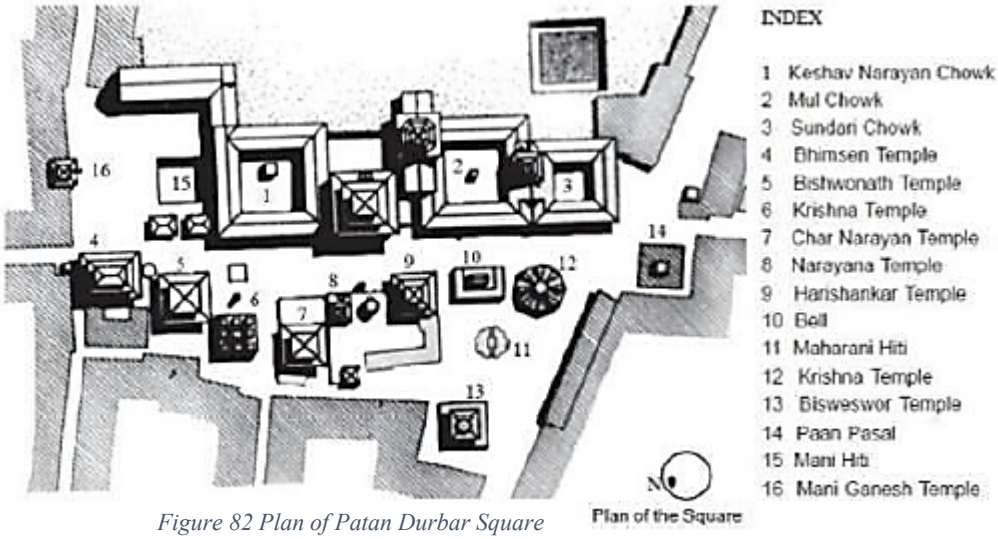


Figure 82 Plan of Patan Durbar Square

4.5.1 General Introduction

- **Location**: Keshav Narayan Chowk, Patan Durbar Square
- The museum being at the heart of Patan city, it is within easy access of locals as well as other visitors
- Also, a local transport park is just in mangal bazar which supports its accessibility
- **Objectives:**
  - To study zoning, functional interrelationship, sizes of spaces, circulation, lighting, viewing dimensions; space for rest, exterior space, architectural expression.
  - To develop the understanding that how cultural spaces were developed in the past.
  - To study traditional performing spaces.
  - To study how people are attracted to energy of the place
- **Functional Spaces of The Museum:**
  - Display Gallery
  - Temporary Exhibition
  - Curatorial/ Offices
  - Café

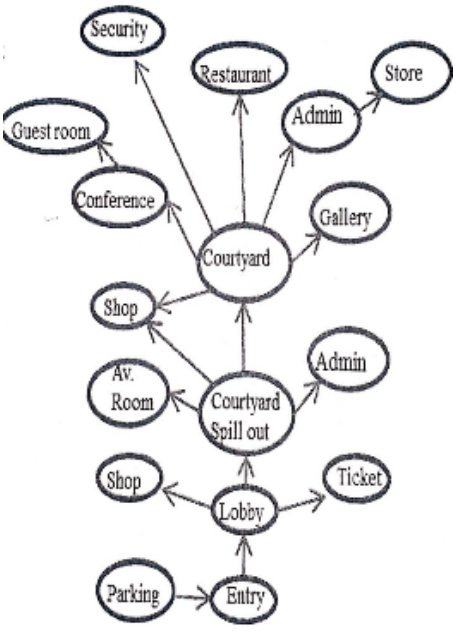


Figure 83 Functional Inter-relation

- Reference library
- Souvenir shops
- Others lobby, information center, cloakroom, toilet, security room, storage.

- **Zoning:**
  - Main entrance at central axis.
  - Service entry from the side near parking area.
  - Access to the café from the service entry.
  - Cafe and garden are segregated by the courtyard which is used as cultural performing space
  - Exhibition space and other spaces are segregated in upper floors by separate access and location.

4.5.2 Building Analysis

1. Architectural Expression

- Courtyard system planning.
- Use of aesthetically pleasing elements- slope
- Jhigati roofs, highly carved windows and doors, struts, Torana etc. represents typical Nepali style architecture.

Windows converting into showcases

2. Circulation

- Courtyards enhance the flow in museum as connector of exterior and interior environment.
- Easy and simple type of rectangular circuit type of flow pattern.
- Elongated room has interesting and easy floe due to presence of courtyard and the balconies.

Each showcase designed for the custom object

3. Lighting

Artificial Lighting

The method of illumination is very effective and conceptualizes the theme of lighting oil lamps in temples.

Display on niches

Figure 84 Display Techniques

- Incandescent lights are used to provide yellow glow similar to oil lamps.
- Niches are fitted with concealed lights and converted to show cases.
- At certain objects, mirrors are inserted at bottom to reflect light from above to resemble the practice of lighting at feet of gods.
- The use of spot lights and track lights provide a pleasing atmosphere in display spaces.
- Spot lights are used. Spot are placed at distance of 2'8" from wall on both sides.

Natural Lighting

- Natural lighting is used for purpose of display techniques.
- Lattice windows contribute to block direct daylight that may harm artifacts.
- Admittance of natural light is seen on second floor

4. Display Techniques

- Simple handmade steel sections, welded and screwed together with glazing and scaling showcases are used.
- Windows has been given new dimensions by converting them into show cases.
- Display is given a particular space either in niches, receding in slanting planes.
- Each exhibit is ensured to excellent display with each informative detail.
- Display cases are hung on wall to provide appropriate visual angles.
- Each showcase is designed for the custom object to be exhibited inside it as a result none of them resemble each other.
- Within each case, objects are insulated from radiant heat of light compartment above with sandwiched panels of frosted glass
- Light compartments are well ventilated to avoid heat accumulation band can be easily opened for inspection.

4.5.3 Energy in the Space

People come or pass by the square for many reasons. Some like to take a short stroll in the evening, some find it shortest and easiest to get through to get somewhere on foot, some come for the sun, some find a place to meet their friends, some like a time in isolation, some just come and watch others, and there are some who want to be watched, the vendors make their living by selling their little things in the place… and so on, goes the list of types of activities that maneuvers around in a square or a plaza.

Figure 85 Various use of open space in Patan Durbar Square

So, the square seems to serve for variety of activities. The square provides well for all the daily users and supplies enough space for their daily activities. The array arranges itself to hold a public meeting, political speech, religious ritual, or a cultural function in an equally effective process. Multiple characters can be drawn from the spaces in the square.

The garden behind Narsimha temple which acts introvert for its users provides effectively as a greenroom during cultural performance in the Dabali in front. The Dabali which acts as a stage during the program provides as seating or sundeck in the winter days. The crowd find their place in the open space in front during a concert or a speech and same space is also used by the vendors in mornings and evenings for their small shops since these spaces are easily accessible through the pedestrians. The straight brick paved path along the palace

buildings is used by pedestrians as their way through the plaza and same place is also used by various exhibitions held annually in the square.

Such diversity in multiple uses of spaces is seen throughout the square. The spaces are divided into subspaces for individual uses and reflect their individual characteristics in such circumstances. But when a larger activity takes place, these subspaces integrate themselves to serve as a whole. Such flexibility of space in an urban open space is the key factor for it being successful.

4.5.4 Subspaces and Activities They Address

The large square is divided into various subspaces to serve more efficiently. The subspaces are defined by building configuration and changes in levels. According to the formation of these subspaces they hold specific characteristics. The courtyards and backyard gardens act reclusive as mentioned previously whereas areas generated by various elements in front allow for more extrovert spaces.

These subspaces are connected through a circulation path. Such circulations provide with movement through spaces. And they are the only factors that guide our perception of the buildings and spaces. Main linkage in the square is created by the north-south path which ends up to a metaled road in the south in a linear approach. It is sunken and brick paved. All the elements in the square are connected through this path.

Vehicular movement is restricted in the square by changing levels of the path at northern end. A ramp is provided which facilitates entry to disabled and baby strollers but no consideration is made for such population in any other part of the square which makes the facility irrelevant and insufficient.

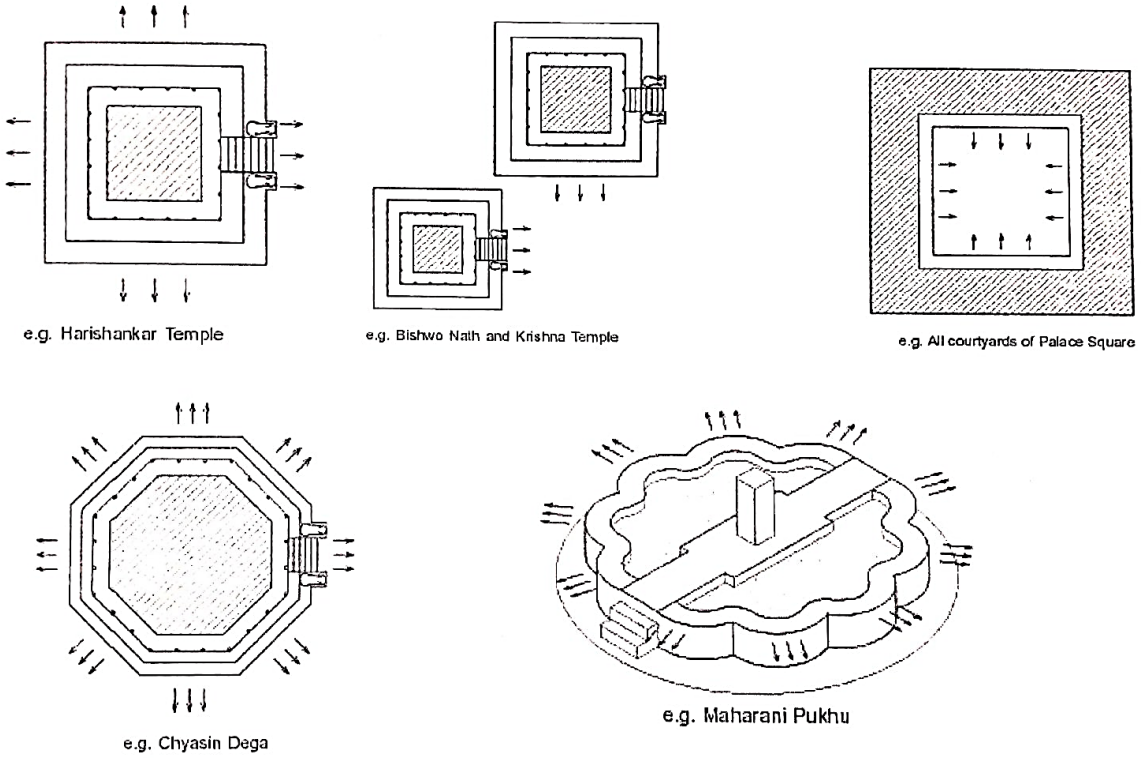
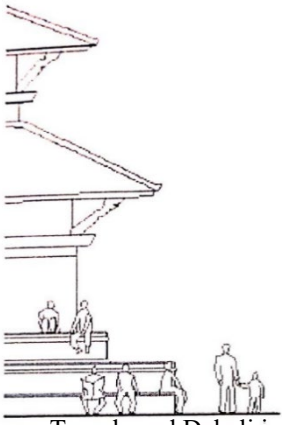


Figure 86 Spaces radiated by various types of geometric layouts

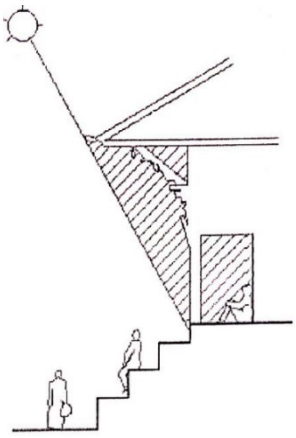
4.5.5 Seating Everywhere

A distinguished character of the square is that it never exhausts in providing seating for the people. Seating can be taken as the most important element in encouraging the plaza use. People find appropriate place to sit and have their little time for recreation anywhere around. The raised platforms, the sunken courts, walls, the fountain, base of the pillars, steps to the temples and the courts... all create different choices of seating for people. To serve for more, wooden benches are installed in front of Keshav Narayan Chowk. These places hold specific quality according to their layout, height, and depth.

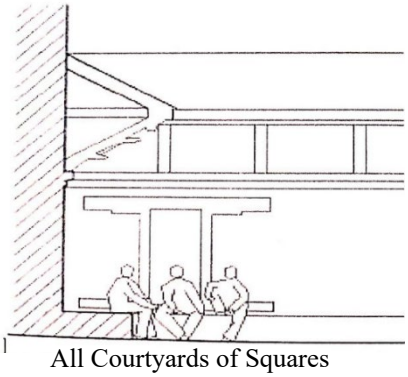
- The spatial qualities of a square should be able to cater people of all kinds and ages.
- Density and variety have to be offered through the intricate planning and the details so that the people do not get bored, and feel interested even if they are alone.
- The variation in the style provides a pleasing visual complexity. The façade and the surrounding built up environment with a dramatic skyline of the temples, pillar, gajur (pinnacle) and the palace provide a greater dynamism and resembles an art in space itself.
- The changes in level with some attractors (sunken Manihiti) and visual and spatial continuity is desirable in any space. Raised temple plinths providing a shaded sitting and resting area, dabalis (raised platforms) for cultural performances and the demarcations of the street which demarcates the activity like sitting and pedestrian movement are the changes in level which has broken the monotony of this large square.



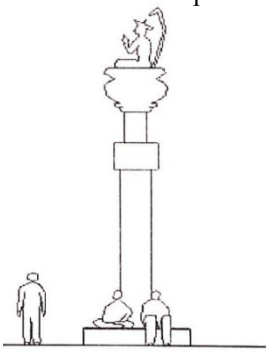
Char Narayan Temple and Dabali in front



Hari Shankar Temple



All Courtyards of Squares



All Stone Pillars in the square

Figure 87 Seating Everywhere

4.6 TACHAPAL TOLE (DATTATREYA SQUARE)

4.6.1 General Introduction

Figure 88 Dattatreya Square

Dattatreya Square or also known as the *Tachapal Tole* is one of the oldest squares of the Bhaktapur since about 8th century A.D. The square is located to the east of the Bhaktapur Durbar Square and *Taumadhi* Square. The square has an open central area with two main temples along with a smaller one. There are also two museums in which the visitors can enjoy the arts and architecture of the *Malla* period. The square also has the quiet side streets leading off to markets, monuments and yet more temples. The central part of the town to area bordering on to it form main square originating presumably from the former village cores, the center of the upper part of town.

The toles are often dominated by one caste, but, mixed up caste group can be seen in *Tachapal* tole. The tole is clearly defined by the central square and tole *Ganesh*. In Tachapal tole, *Dattatreya* square is the main square where *Dattatreya* temple is the main dominating-built form. The tole is defined by the *Salan Ganesh* and *Nasa: Dyo (Natyeswore)*. God of dance which is worshipped by homogeneous caste. The urban spaces and the built form of *Dattatreya* square as a whole give the urban character of traditional Newar towns.

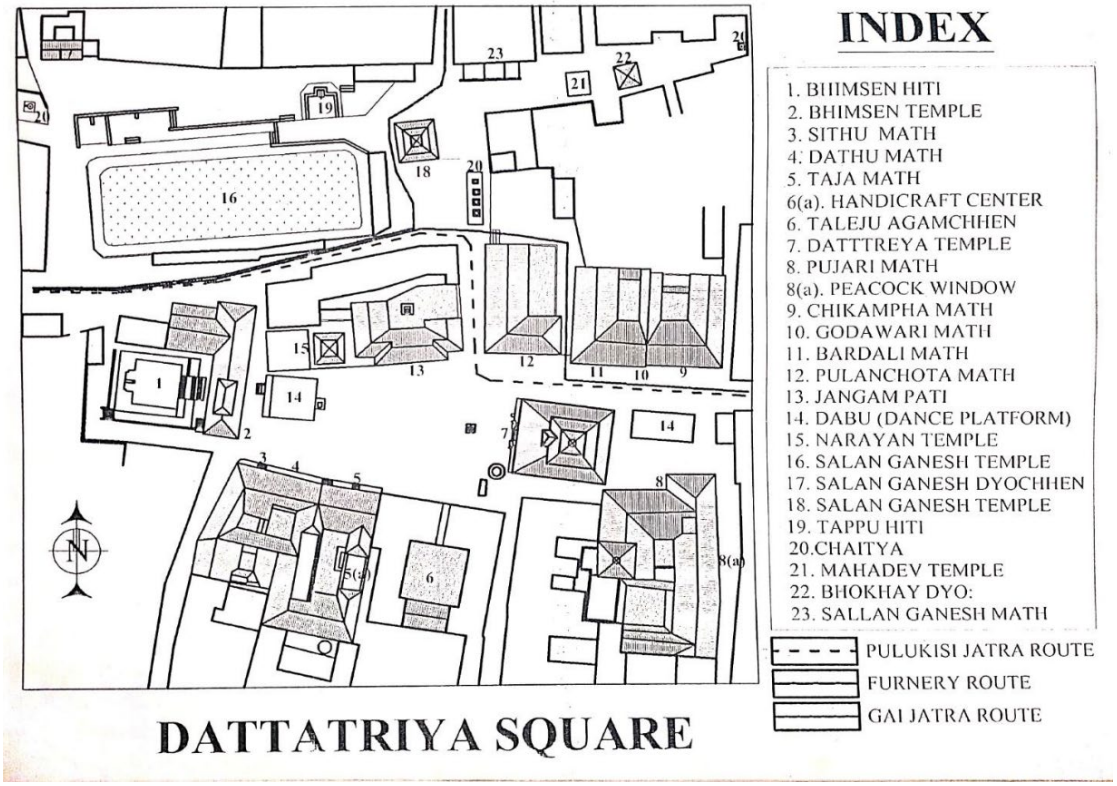


Figure 89 Plan of Dattatreya Square

4.6.2 Urban Space Planning

- *Dattatreya* square is broad part of Main Street where seven other narrow streets come to meet the square orientating from different directions. The temple complex is situating at nearly about center of the large open square.
- The meeting point of the narrow street to the square is enhanced by creating broaden spaces due to offsets.
- The streets are not arranged in straight and linear, but, the adjacent façade of the street is enhanced by creating different urban and building elements as a focus of the street. The discontinuity of façade breaks visual monotony to create enjoyable built environment on the street.
- The courtyards of *Math* and others are mostly accessible through alleys from the main square. The courtyards are arranged along the mutually perpendicular axis of street.
- Hierarchy of street, open space-built form can be distinctly observed.
- Street - Jatra Route, Alleys, Galley, Funeral Route.

4.6.3 Built form planning

- There are 10 *Maths* in *Tachapal* tole, nine of them bound the main square to create specific urban characters and built environment.
- The *Hiti* (water conduit), *Bhimsen* temple, *Dabu* (dance platform) and stone column are set in linear axis. Similarly, Dattatreya temple and stone column with *Garuda* are also set in another axis.
- *Bhimsen Dabu* is located at western part of the square so that any dance/ music or cultural performance can be easily watched through the windows of *Maths* and the open square.
- The *Marcha Dabu* is located at the backside of *Dattatreya* temple so that the performance on the platform can be easily seen through the windows of *Pujari Math* and *Chikanpha Math.* The dance performance is annually organized on that *Dabu* in *Krishna Janmaastami* of *Gai Jatra* festival.
- *Dattatreya* temple is located on the center of square. The massive *Math* structures are situated on the southern part of square. Those structures dominate to the structures on the northern part of the square.

4.6.4 Socio-cultural activities

- *Gai Jatra* route procession pass through the main square. Any other religious and cultural processions follow the same route.
- *Nava Durga* cult dance is annually organized in front of *Dattatreya* temple. *Agamchhen* of *Taleju Bhavani* is located at *Wanalayeku* (forest palace). *Taleju Bhavani* is the incarnation god of *Nava Durga*.
- *Dapha, bhajan* and ritual songs are sung in *Dattatreya Sattal* and *Bhimsen Pati* in the evening.

- *Bramhani Khat Jatra* procession also takes place in Main Square.
- *Shiva Ratri* festival in spring is the special day for offering puja to Dattatreya temple. Pilgrims from India and other part of country visit firstly Pashupati Nath and afterwards the *Dattatreya* temple. The amount of *Maths* on *Dattatreya* premises provide shelter for mail devotees whereas female pilgrims are not permitted to stay overnight. The feeding service is also provided to the pilgrims.
- Every Monday of *Shrawan* and every Wednesday of *Poush* are the days for offering Puja to Dattatreya. So, mass of people gathered on those days in temple premises.
- There is a separate funerary route in Dattatreya square.

Dattatreya Temple

Salan Ganesh

Bhimsen Hiti

Bhimsen Temple with Dabu in front

Pujari Math

Figure 90 Urban spaces in Dattatreya Square

4.7 JEAN-MARIE TJIBAOU CULTURAL CENTRE

4.7.1 General Introduction

- **Location:** Noumia, New Caledonia
- **Designed:** 1991A.D.
- **Built :** 1998 A.D.
- **Architect:** Renzo Piano
- **Objective:** built to honor Kanak leader Jean-Maria Tjibaou and also for Kanak people
- **Site:** A strip of land surrounded by the ocean and lush vegetation

Figure 91 Tjibaou Cultural Centre

Source: jawahar-kala-kendra-jaipur-india/

About the project

The building's ten wooden cases which refer to the traditional Kanak huts as well as the surrounding vegetation, create the imagery of the building. In addition to being reflection of tradition, these cases are also highly articulated environmental system which allows for natural ventilation of the building. It is documented as a green building. The building is a tribute to the leader Jean Marie Tjibaou. This project is in fact a blend of history and tradition accurately presented within Architectural innovation.

Situation

Noumea, capital of New Caledonia. The cabins are built inside a nature reserve along the coast, surrounded by lakes and mangroves at a site of great beauty. The Cultural Center Jean-Marie Tjibaou was discovered as the most innovative and exciting project in the city, about 10 km from downtown.

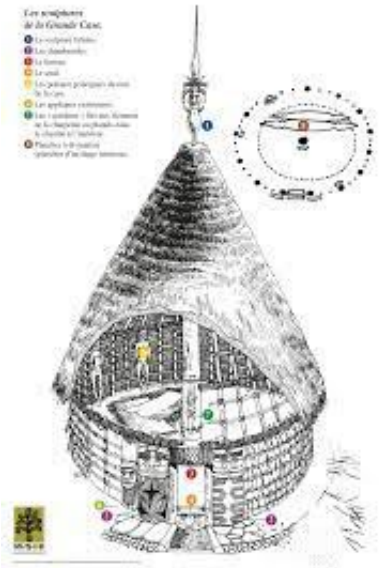


Figure 92 Traditional Kanak Hut

4.7.2 Design concept

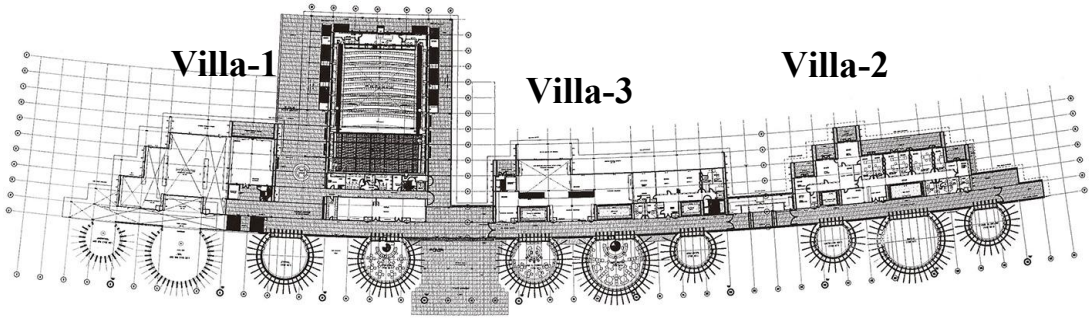
To interpret the building from its contextual resources is part of Piano's belief that the architectural invention cannot ignore history or tradition. There elements are the basis, the form on which to build, utilizing only the basic skill of architect to translate history, geography, geology and climate into architectural innovation. Piano took the ideas of the village cluster and the ribbed huts, creating an explicit visual link from the buildings in the vernacular, to the curved structure of the abstracted huts within the cultural center from pacific culture.

- It is an example of sustainable cultural center.

- **Inspired by native architecture:** modeled after traditional Kanak village. But they are not built exactly like the traditional architecture. Village pays homage to the tradition of the culture without falling into a parody of it

4.7.3 Design features

- The design consisted of 10 pavilions of various sizes ranging from 9 m to 24 m high situated asymmetrically along the main path.
- Cultural center composed of three 'villages' made up of ten 'great houses" of varying sizes and functions
- Studios for activities like music, dance, painting and sculpture
- Space allocation:
  - Villa 1- Permanent and temporary exhibitions: an auditorium and an amphitheater
  - Villa 2- Administration, research library and a conference room
  - Villa 3- Cabins for music, dance, painting, sculpture
- Apart from pavilion, there are other facilities like central auditorium, amphitheater, administrative department, research area, conference room and library.
- Outdoor spaces seem unfinished, the sunken amphitheater and an open courtyard for creative activities at the end of the building path, permit the building to be open to future change, addition and evolution.
- Identity of the Kanak not only reinforced through the form of the building but through its relationship with the natural landscape.



Plan of Tjibaou Cultural Centre

Overall Section of Tjibaou Cultural Centre

Figure 93 Plan and Section of Tjibaou Cultural Centre

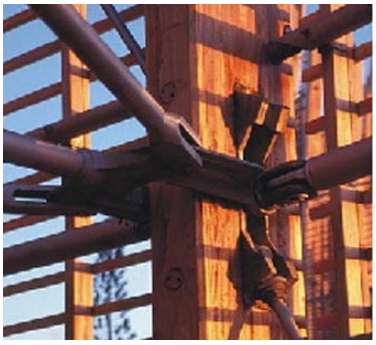
Source: jawahar-kala-kendra-jaipur-india/

Structure

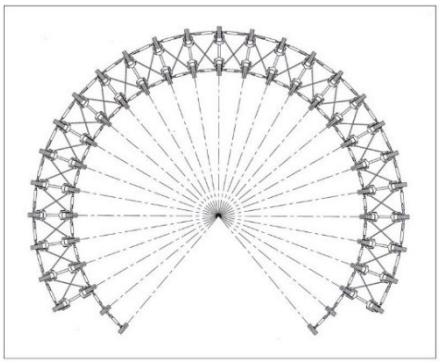
The structure and operation of the cabins Caledonia replicated and adapted architectural and socially. They all have created a structure shaped peineta iroko. Reminiscent of the huts and crafts Kanak, the slender ribs of the lath structure and among them are seamlessly integrated in the lush landscape and the culture of its inhabitants.

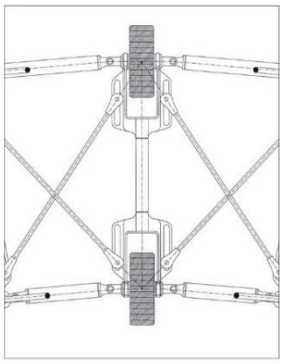
Although these ancient wooden slats were also, on this occasion, the union has made structural tube horizontal and diagonal bracing rods of stainless steel. These structural elements reminiscent of traditional mainstays such as the spine of the fish to avoid the beams warped long.

Renzo Piano describes the structures that are curved like huts, built with wooden beams and nerves are looking containers archaic, whose interiors are equipped with all the possibilities offered by modern technology.



Steel support to the Structure





Support and Joinery to the Structure

Figure 94 Structural System

Materials

- Traditional material iroko wood along with glass, steel and bamboo
- Respect to traditional construction: sophisticated engineering study

Climatic condition and measures

- Oceanic tropical: warm and humid
- The building utilizes natural ventilation through stacked ventilation and ventilation due to wind force.
- Operable roof skylight & laminated wood: Natural Ventilation
- Bamboo wall filter light in interior

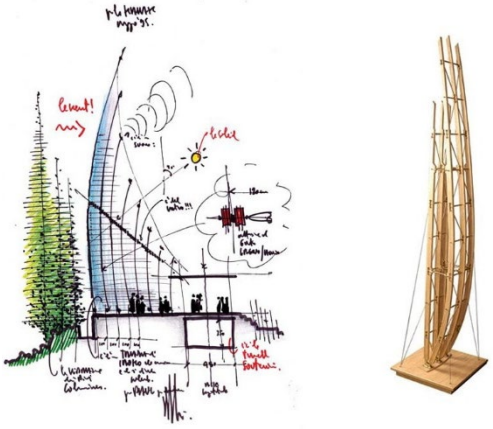


Figure 95 Sustainable Approach

4.7.4 Inferences

- Respect to the traditional material with blend of modern technology
- Unfinished appearance of structure: reminder of culture still in the process of evolution

4.8 JAWAHAR KALA KENDRA, INDIA

4.8.1 General Introduction

Figure 96 Jawahar Kala Kendra

- Location : Jaipur, Rajasthan
- Established : 1986 AD by Charles Correa
- Built-up Area : 9.5 acre
- Feasibility : The site is 6km from railway station, 6.4km from airport, 5.7km from hospital
- **Objective:**
  - To study the space to the cultural and spiritual values of India and display rich craft heritage

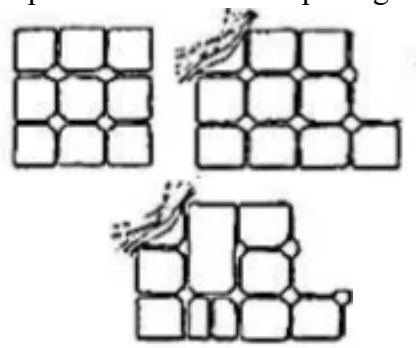
About the project

This cultural center for the city of Jaipur, is dedicated to the memory of India's great leader Jawaharlal Nehru. Ideas for the building, sited in an open field near the university in a new part of the city, formed in Correa's mind; but it was not until 1986 that the concept for the building was finalized.

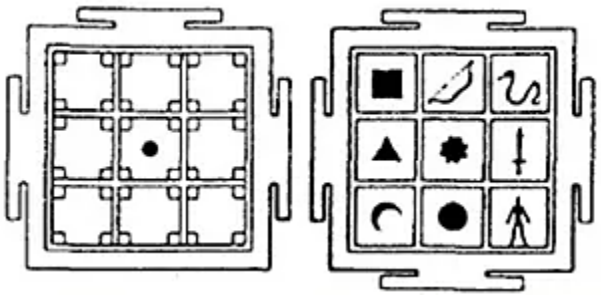
4.8.2 Design concept

The plan of Jawahar kala Kendra is a reflection of the original city plan of Jaipur, which is based on the concept of nine Mandalas or Navagraha placed in a grid pattern with one block displaced to accommodate the main entrance. One of the squares is pivoted to recall the original city plan and also to create the entrance. The plan of Jaipur city based on the nine square yantra in which one square is displaced and two central squares combined. The squares are defined by 8m high wall, symbolic of the fortification wall along the Jaipur old city.

Representation of these nine blocks as the nine planets. For instance, library in Jupiter section which represents wisdom and knowledge. The Mars section representative of power has the administrative block. The astrological symbol of each planet is directly expressed in a cut-out opening on its external wall.



Arrangement of Typical Plan of Jaipur city



Nine Mandalas

Figure 97 Conceptual Development

4.8.3 Building Analysis

1. Facilities

1. Library
   - G.F library
   - F.F audiovisual reading
2. Sphatic Art Gallery
   - G.F DIR. Music
   - F.F art gallery
3. Workshop
   - F.F photo workshops
4. Museum
5. Art Gallery
6. Satkar Cafeteria
   - F.F guest house, dormitories
7. Admin Block
   - F.F offices
8. Open Theatre
9. Auditorium

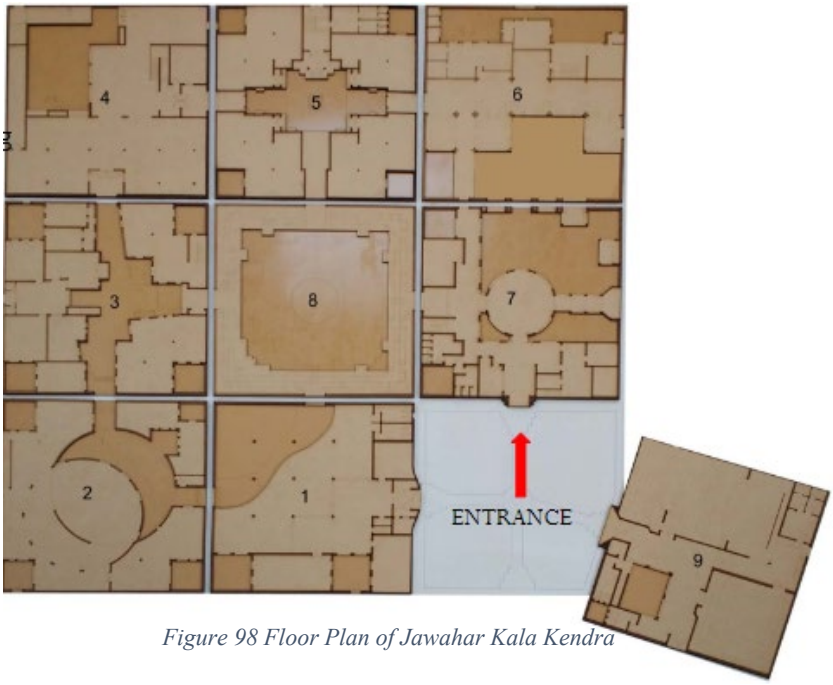


Figure 98 Floor Plan of Jawahar Kala Kendra

2. Circulation:

- Grid iron planning
- Central courtyard
- Inward looking
- 2 major axes

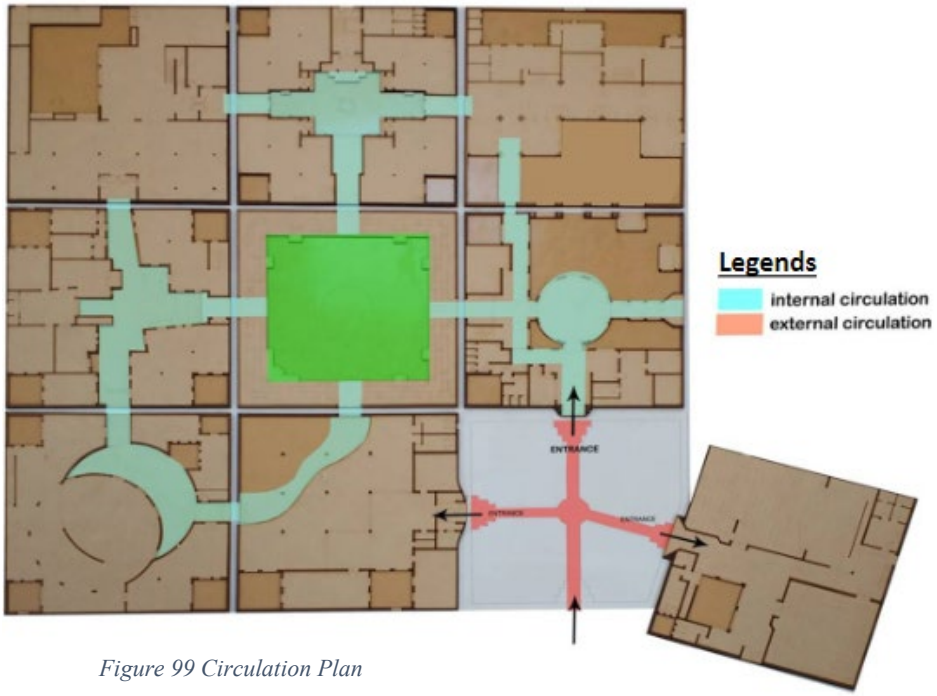


Figure 99 Circulation Plan

3. Response to Climate:

- Material: red sand stone and white marble
- Vaastu symbols on façade of each unit
- Small punctures on walls for ventilations.
- Light shafts have step profiles with marble capping
- Smaller openings
- Light shafts at corner of each unit
- Central courtyard brings in light and air

Figure 100 Central Courtyard

4. Main Features:

- Height of the gallery is approximately 4m in height.
- Small square jalli windows are used in art galleries for ventilation.
- Walls are decorated with traditional paintings depicting royal heritage of the state.
- Heavy battened doors the used to define entrance.
- Glass wool is used for absorbing sound in auditorium.
- The central amphitheater has a square plan with a circular stage in the center offering a three sixty-degree view of the audience to the performer.
- Madhyavarti – an open-air theatre designed after a traditional Rajasthan step well where steps are used for sittings.
- Interplay of light and shadow in the building.

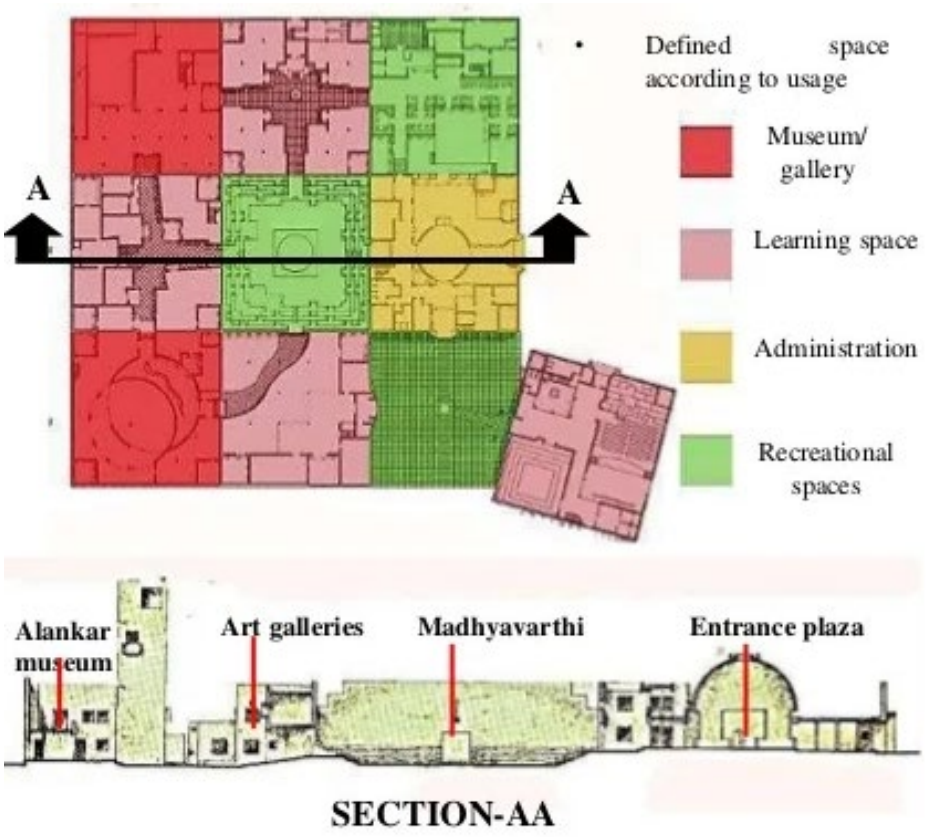


Figure 101 Typical Plan and Section of Jawahar Kala Kendra

4.8.4 Inferences

- The building is a contemporary metaphorical replication of the basic plan of city of Jaipur, based on the *Vastu Pursh Mandala*.
- The open-air theatre is enclosed by the 8m high walls which create acoustic problem at the time of crowd.
- The place has an amazing interplay of light, shadows and colors, evoking emotions in the user and invite him to move further.
- Parking space is insufficient at the time of festival hosted by the Kendra.
- The landscaping was also done as per planets astrological values in the whole complex, in each square wherever required.
- In pergolas of library section, spanning between the beams was designed and kept such that the local materials available like wooden bamboo sticks could be used to complete the entire space frame.
- Local materials such as red sand stone and marble are used in abundance.
- High walls with no fenestration in the facade make the building enclosed and does not open up to the city.
- Direct entry to Library, Administration, Auditorium.

Glazed facade of library

Auditorium

Exterior views of Art Gallery

Ground floor at Alankar Museum

Figure 102 Different Spaces of Jawahar Kala Kendra

4.9 COMPARATIVE ANALYSIS

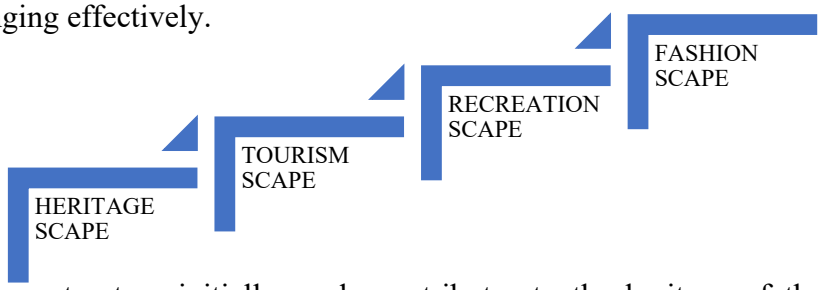
Table 10 Comparative Analysis

CULTURE CENTRE	ARCHITECTURAL EXPRESSION	PLANNING & FUNCTION	CIRCULATION	LIGHTING	MATERIALS	INFERENCES
RUSSIAN CULTURAL CRNTRE	○ Brick exposed and slope roof at entrance evoking Nepalese architectural character. ○ Modern Technology	○ Functions distributed around central entrance foyer cum exhibition space.	○ Wide corridor in first floor used for display and circulation.	○ Innovative and efficient use of natural light, indirect light, skylights	○ Modern materials like cement and concrete	○ Circulation space overlapped with display area increased efficiency and is effective. ○ Efficient play of natural light in spaces can create pleasing interiors cape
POTTERY SQUARE	○ Load bearing structure of mud mortar and brick exposed facade ○ Traditional Technology	○ Upper portion used for residential purpose. ○ Ground Floor used for raw materials storage	○ 3-Bay in Ground Floor: ○ Front Part: a souvenirs shop ○ Mid part: Store ○ Third part: staircase	○ Workspace on ground floor, lights are through door openings thus found inadequate	○ Traditional materials with brick, mud mortar and artistic wooden carved doors and windows	○ Natural light not sufficient in workspace, have to depend on artificial light ○ Community working environment
NEWA LAHANA	○ Modern brick exposed	○ Exterior wall used as display gallery	○ The whole area of tole as a part of museum	○ Use of natural and artificial lighting	○ Modern materials like cement and concrete	○ Cultural awareness through tourism development
NEPAL BHASA ACADEMY, KIRTIPUR	○ Modern brick exposed- not much considerations in form ○ Newari expression-decorative timber doors and windows	○ Ground Floor: to G.K. Hall: office room, store room ○ First Floor: library, meeting room, Gallery ○ Second Floor: FM station	○ Central Hall, two symmetrical wings on each side of the hall	○ Lights are through openings thus found inadequate ○ Use of various artificial lighting	○ Modern materials like cement and concrete	○ Access should be easy, clear and visible. ○ Building itself should express its functional characteristics
PATAN MUSEUM	○ Brick exposed and slope roof at entrance evoking Nepalese architectural character. ○ Traditional Technology	○ Elongated room with interesting and easy flow ○ Courtyard system planning	○ Courtyards as connector of exterior and interior environment.	○ Use Lattice windows filter the daylight ○ Use of various artificial lighting	○ Jhigati roofs, highly carved windows and doors, struts, Torana etc..	○ Courtyard are used as open interacting space for cultural shows. ○ During restoration, structure strengthened using modern technology.
TACHAPAL TOLE	○ Nepalese architectural character ○ Traditional Technology	○ Courtyard system planning	○ Courtyards as connector of exterior and interior environment.	○ Use Lattice windows filter the daylight	○ Jhigati roofs, highly carved windows and doors, struts, Torana etc..	○ Courtyard are used as open interacting space for cultural shows.
TJIBAOU CULTURAL CENTRE	○ Respect to traditional construction: sophisticated engineering study	○ Grouped into three villages • **Villa-1:** auditorium and amphitheater • **Villa-2:** administration, library and a conference room • **Villa-3:** cabins for traditional activities	○ Cabins connected by pedestrian pathway ○ Has its own paths, vegetation and public spaces	○ Imposed the respect for natural elements such as wind, light and vegetation	○ Fusion of traditional material with modern	○ Respect to traditional construction: sophisticated engineering study ○ Example of an Sustainable Design ○ Luxurious and Monumental ○ Space Planning
JAWAHAR KALA KENDRA	○ Partially open courtyards and traditional design elements of Rajasthan	○ Grid iron pattern planning ○ Vaastu symbol on façade of each unit	○ Inward looking ○ Central courtyard	○ Central courtyard bring in light and air	○ Red sand stone and white marble	○ Traditional way of displaying Planning and spatial relations ○ Local identity through modern solutions

5 CHAPTER-V: SITE ANALYSIS

5.1 SITE SELECTION-PROCESS

Since the project is contemporary Newari Cultural Center, so such an area was required which portrayed the urban transition of Newar community. The main settlement of Newars lies in Kathmandu Valley. Since the project is mainly focused in the study of Newari settlement of Bhaktapur, the site was chosen in the Bhaktapur. In the phase of development, all places have been subjected to change. Many spaces are changing without logic, whereas some are changing effectively.



Any building or structure initially made contributes to the heritage of that town, for example, the Newari Architecture present creates a heritage scape of Kathmandu Valley. When people start knowing about the heritage of that specific town, the heritage scape then changes to tourism scape as different commercial activities are added for the facilities of tourist. Even though the specific buildings count as heritage but the whole area isn't a heritage scape but a tourist scape then. With the development of touristic facilities, different recreation facilities are added as well. So, Cultural Center at Bhaktapur aims to provision for tourism sectors.

5.2 SITE SELECTION CRITERIA

- Major Target Group: Newar
- Secondary Target Group: Tourist (Local and Global)
- Easy accessibility
- Presence of adequate infrastructures like transportation, electricity and sanitation
- Outskirts of core area of Bhaktapur to act as element of development of an area.
- Lies on the way to Bhaktapur which is a historical town rich with Newari culture and art
- The site should be located at a serene and peaceful location
- There must be a potential for future expansion.

5.3 SITE JUSTIFICATION

- Outskirts of core area of Bhaktapur to act as element of development of an area.
- Least walking score having minimal transit score as well.
- Located to peaceful and calm area that support learning and other public function derived from program formulation.

- Site can be developed as cultural area and serve as contextual feature that will suggest.
- Cultural heritage area of place of interest for tourist like Bhaktapur Durbar Square, Tachapal Tole, Taumadhi Square, Changunarayan, etc.

5.4 SITE INTRODUCTION

- Location: Ittapako, Nagarkot Road, Bhaktapur
- Geographically: 27°40'35"North 85°25'07"East
- Area: 24,500m² (48-2-2-1)

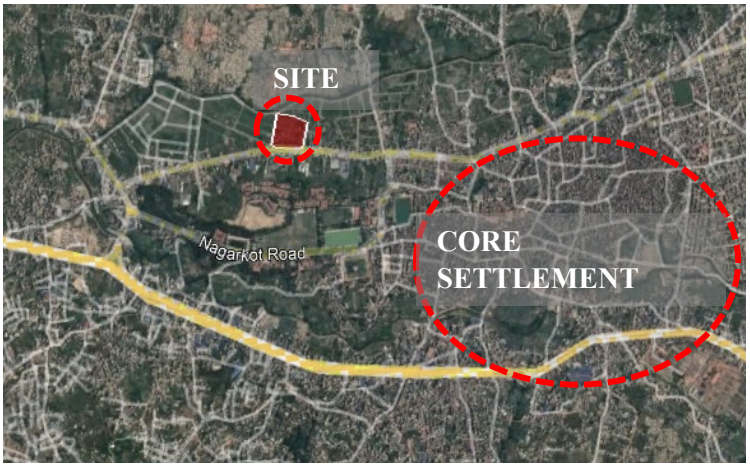


Figure 103 Site Location
Source: google earth

5.4.1 Physical and Environmental Aspects

1. Approaches and Access (Roads):

The site is surrounded by roads from three sides i.e., 6m main road at south and 4m secondary roads at east and west. It is 1.2 km away from Araniko Highway. The site is not approachable by public vehicle. So, people need to visit on private vehicle or about 14 min on foot from Sallaghari Bus Stop and about 5 min walk from nearest bus stop (Haku Falcha Chwok) in eastern side.

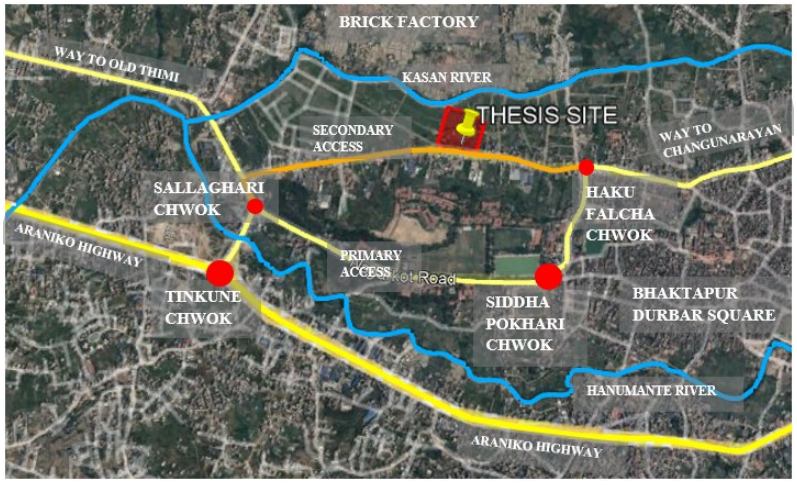
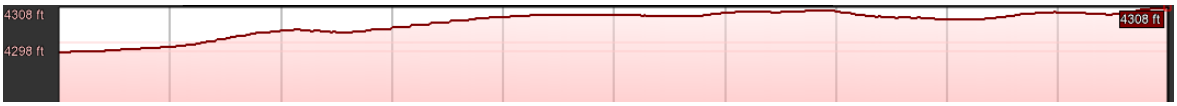


Figure 104 GPS Linkage of Proposed Site with Access and Linkage

2. Site Topography:

Flat land with 3m-5m contour



E-W Site Section

N-S Site Section

Figure 105 Site Section
Source: google earth

3. Shape and Size:

The site is irregular in shape. The total area of the site is 24,500m² (48-2-2-1).

4. Land and Land Use:

The site is owned s private property. Presently it is used for agriculture purposes.

5.4.2 Physical Features

- **Drinking water supply**: Sufficient water supply and supplied through community taps and from under-ground source
- **Electricity and telephone**: Electricity overhead system. Electricity line is taken from the nearest electric pole in front of the road supplied by NEA. Telephone line passes below the high-tension wires in the poles along with the electricity lines.
- **Sewerage and sanitation:** Open drainage system and the sewerage and drainage system is available alongside the road along the site.
- **Socio-Cultural Aspects:** The site has cultural and historical importance through its neighborhood heritage.

5.4.3 Site Surroundings

The location lies in the area between Thimi and the main Bhaktapur town. The southern side of site has been designated as Bhaktapur industrial zone. It consists of NEA building, Pharmaceutical Industry, Siddha Pokhari and Birendra Sainik school on south eastern part. A small Kasan River lies on the north along with brick factory. The main access road is the popular route to Nagarkot (not for public vehicles however). On the western part is the agricultural land but currently barren. On the eastern part there are agricultural lands and on the northern part also there are agricultural lands. The Sallaghari Chwok is the important transportation junction of the area which has led to newer unplanned settlement around the old Thimi road.

- In the eastern side = Local Residential and agriculture land
- In the western side = Agricultural Land
- In the northern side = Kasan River with brick factory behind

- In the southern side = Nagarkot Road with NEA building, Pharmaceutical Industry, Siddha Pokhari and Birendra Sainik school opposite side of road.

5.5 SITE PROXIMITY

- 1.2 km away from Araniko Highway
- 1.3 km away from Bhaktapur Durbar Square
- 750 m away from Bhaktapur Industrial Estate

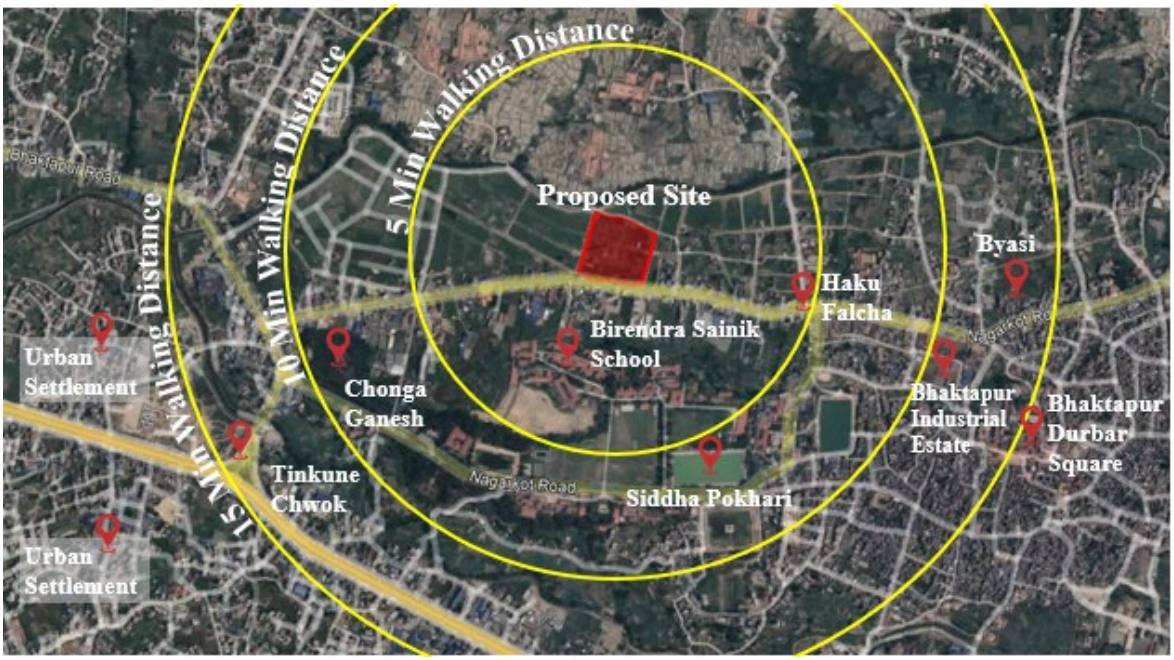


Figure 106 Site Proximity
Source: google earth

5.6 CLIMATIC STUDY OF SITE

In Bhaktapur, the wet season is warm, muggy, and partly cloudy and the dry season is comfortable and mostly clear. Over the course of the year, the temperature typically varies from 37°F to 83°F and is rarely below 33°F or above 89°F.

The warm season lasts for 6.2 months, from April 6 to October 11, with an average daily high temperature above 79°F. The hottest month of the year in Bhaktapur is June, with an average high of 83°F and low of 67°F. The cool season lasts for 2.0 months, from December 9 to February 11, with an average daily high temperature below 68°F. The coldest month of the year in Bhaktapur is January, with an average low of 37°F and high of 64°F.

The rainy period of the year lasts for 6.7 months, from April 9 to October 31, with a sliding 31-day rainfall of at least 0.5 inches. The month with the most rain in Bhaktapur is July, with an average rainfall of 7.2 inches. The rainless period of the year lasts for 5.3 months, from October 31 to April 9. The month with the least rain in Bhaktapur is November, with an average rainfall of 0.1 inches. (Weather Spark, 2021)

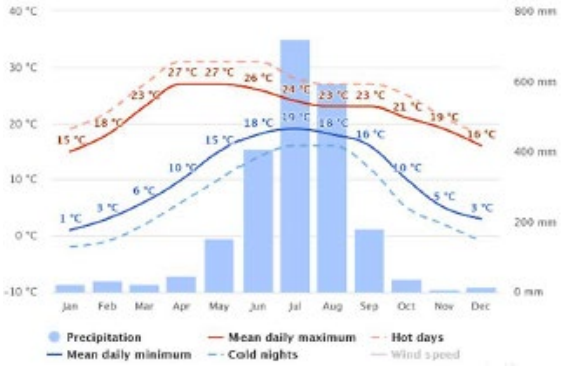


Figure 108 Temperature and precipitation

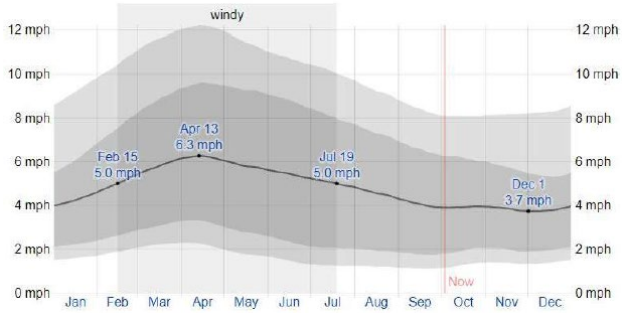


Figure 107 Wind speed diagram

5.7 BYE-LAWS

The site lies in the mixed residential sub-zone. Since, the proposed project is a public building bye-laws for public building for development zone have been considered. (*Building Bylaws 2064*)

- Plot Area Maximum Ground Coverage (GCA):
  - 4-0-0 : 70%
  - 0-4-0-0 to 0-8-0-0: 60%
  - 0-8-0-0 to 1-0-0-0: 50%
  - Above 1-0-0-0 : 40%
- FAR: 2
- ROW: 11m from the center of the road
- Set Back:
  - 3m from road
  - 1.5m from boundary
  - 20m from River bank

5.8 SWOT ANALYSIS

1. Strength of the site

- The current advancement and movement within the site are sparse, the location subsequently has the potential to carter any development in future.
- Sub Urban setting with little human activity and traffic volume in encompassing gives tranquil working environment.
- Easy openness for private as well as open transportation.
- Located just few minutes' walk from Sallaghari Junction

2. Weakness of the site

- Lies in inner area restricting the view of site from north and western side.
- No direct public transport service in the area.
- Although accessible through public transport, the distance from city center can be a minor issue due to traffic congestion in the Koteshwor Area

3. Opportunities

- Site lies on residential developmental zone which helps in further enhancement of area.
- Located to peaceful and calm area that support learning and other public function derived from program formulation.
- Site can be developed as cultural area and serve as contextual feature that will suggest.

4. Threats

- Few residential buildings in the site.
- Lies in the depressed area.
- Industrial zone lies on the southern part of the site.

5.9 SITE PICTURES

View from North side

View from Western side

View from South side

Main Road view

Figure 109 Site Pictures

6 CHAPTER-VI PROGRAM FORMULATION

Newari Culture Center targets to promote, practice and strength the rich culture of Newars through: **Learn, Share, Practice, Display and Perform**.

6.1 VISITOR'S COUNT

Since the project, Newari Culture Center, lies on the way to the Bhaktapur Durbar Square, the total number of tourist visitors of Bhaktapur Durbar square is taken as the reference for the total visitor's count for the culture center.

Table 11 Visitor's Count

Description	Number
Bhaktapur Durbar Square receiving foreign tourist in 1st half of fiscal year 2018/19	76,139
Foreign tourists visit Bhaktapur Durbar Square per day	423
Assume local visitors of Bhaktapur Durbar Square per day	Min. 400
Total tourists visit Bhaktapur Durbar Square per day	823 (423+400)
Taking 70% tourist visit to Newari Culture Center per day	576

(Source: Khanal, n.d.)

6.2 MAJOR FUNCTIONS

1. Training blocks:

Bhasa and Lipi Space:

Classes for learning Nepal bhasa and writing in *Ranjan Lipi* and *Prachalit Lipi* will be taught in this block. Since language is a practical subject, class rooms will be interactive and the central courtyard will act as an interacting space for carrying out small talk-programs within the block.

Music Space:

Music is one of the major parts of Newari culture. Music is the language which doesn't have any age barrier or differences. Music can play an important role to connect the gap between older generation and new generation. The music area will provide traditional musical instruments which we perform during our rituals along with its song and dance practice area.

Painting and Pottery Space:

It contains the space for Paubha painting and the paces required for pottery.

2. Display block:

The display gallery also focuses on how to impart knowledge and display the rich cultural values and practices in Newa: city The displays will consist of:

- Festivals:
  - The displays will portrait the festivals which Newari celebrate throughout the year. The display will consist of written notes, models and artifacts.
- Rituals:
  - The display will portrait various rituals performed from birth to death in a Newar community.
- Handicraft workshop and display
  - This section will function as both workshop and gallery. People will get to see the live working of traditional handicraft in a room.
- Musical instrument
- Painting and Photograph gallery

3. Library Center:

Library, Audio-visual room, E-library, and well-informed persons will provide appropriate and correct information regarding culture and tradition of Newari culture.

4. Performance Center:

The center will also be facilitated practice of cultural performances, Open Air theatre, practice halls and auditorium are included in the project.

5. Ritual Courtyard:

Newari culture include rituals which are practices and performed in community. The culture center hence provides a ritual courtyard for practice and display of such rituals. This will not only help to continue the rituals but also help to make such rituals known to the outer world. A multipurpose hall is provided in the ritual courtyard so that various trainings and household courses can be provided time to time.

6. Restaurant:

The cafe will provide Newari delicacies in Newari environment. The cafe will have seating layout reflecting Newari culture. Also, open courtyard is provided to facilitate feast in times of festivals and ritual practices.

7. Other facilities:

- Public square
- Utility room
- Parking
- Guard house
- Cafeteria

The final area formulation is listed in the table below:

Table 13 Administration Spaces Area Calculation

S.N.	Spaces	Number of Unit	Area (m²)
1	Reception	1	31
2	Waiting Lounge	1	38
3	Director Room	1	30
4	Vice Director Room	1	27
5	Administrator Room	1	25
6	Accountant Room	1	25
7	Administrative Department for Staff	1	76
8	Meeting Room (25 person)	1	46
9	Program Manager	1	24
10	Pantry	1	14
11	Store	2	47
12	Toilets	2	70
13	Service, circulation and others		486
Total			**939**

Table 12 Library Spaces Area Calculation

S.N.	Spaces	Number of Unit	Area (m²)
1	Reception and Baggage	1	37
2	Librarian's Room	1	14
3	Reading Space	1	67
4	Book area	2	144
5	E- library	1	28
6	Audio-Visual Room	1	32
7	Toilet	1	28
8	Conference Hall	1	65
9	Service, circulation and others		215
Total			**630**

Table 14 Ritual Courtyard Area Calculation

S.N.	Spaces	Number of Unit	Area (m²)
1	Reception and office	1	25
2	Multipurpose Hall (200 people)	1	273
3	Green rooms	2	64
4	Store and Kitchen	1	67
5	Audio-Visual Room	2	52
6	Toilet	1	40
7	Service, circulation and others		225
Total			**746**

Table 15 Display Spaces Area Calculation

S.N.	Spaces	Number of Unit	Area (m²)
1	Ticket Counter	1	30
2	Office room	1	24
3	Meeting room	1	24
4	Musical Instrument Gallery	1	132
5	Ritual and Festival Gallery	1	167
6	Dance Gallery	1	80
7	Thanka Painting Gallery	1	174
8	Handicraft Workshop and Display	1	135
9	Seasonal Gallery	1	74
10	Store	1	18
11	Toilet	2	62
12	Service, circulation and others		496
Total			**1416**

Table 16 Training Area Calculation

S.N.	Spaces	Number of Unit	Area (m²)
1	Office area		175
2	Music Classroom (24 students)	2	133
3	Practice Hall (12 students)	2	140
4	Painting Classroom (24 students)	1	56
5	Painting Studio (12 students)	2	140
6	Bhasa and Lipi Classroom (24 students)	1	45
7	Audio Room	1	43
8	Audio-Visual Room	1	42
9	Wheelers room	1	42
10	Mud store and preparation room		48
11	Designing and Detailing room	1	96
12	Kiln	1	14
13	Toilet	5	115
14	Service, circulation and others		877(798+79)
Total			**1936**

Table 17 Performing Spaces Area Calculation

S.N.	Spaces	Number of Unit	Area (m²)
1	Lobby and foyer	1	494
2	Seating Area (400 people)	1	362
3	Store	1	35
4	Green Room	2	106
5	Stage and Back Stage	1	147
6	Rehearsal Area	2	88
7	Toilets	1	50
8	Ticket counter and office		58
Total			**1367**

Table 18 Other Spaces Area Calculation

S.N.	Spaces	Number of Unit	Area (m^2)
1	Restaurant (150 people)	1	474
2	Cafeteria (100 people)	1	293
3	Market Square	2	508
4	Souvenir Shop	1	60
5	Pati	2	78
6	Temple	1	34
7	Guard House	3	75
8	Covered pathways		380
9	Clinic	1	30
Total			**1932**

Parking Area Calculation

- No. of Cars = 60
- No. of buses = 4
- No. of motorbikes = 209

- Total area of surface parking: 2287+1021 =3308 sq.m.
- Total area of basement parking: 728 sq.m. (18 cars)

Total Built up Area without wall =8966 sq.m.

10% Wall = 10% of 8966 = 896.6 sq.m.

Total Built UP Area with wall = 8966 + 896.6 =9862.6 sq.m.

Total area calculations

- Site Area = 24,500 sq.m
- Total Ground Coverage Area = 6949.73 sq.m (28.4%)
- Total area of surface parking =3308 sq.m. (13.5%)
- Open spaces and landscape = 14242.27 sq.m. (58.1%)

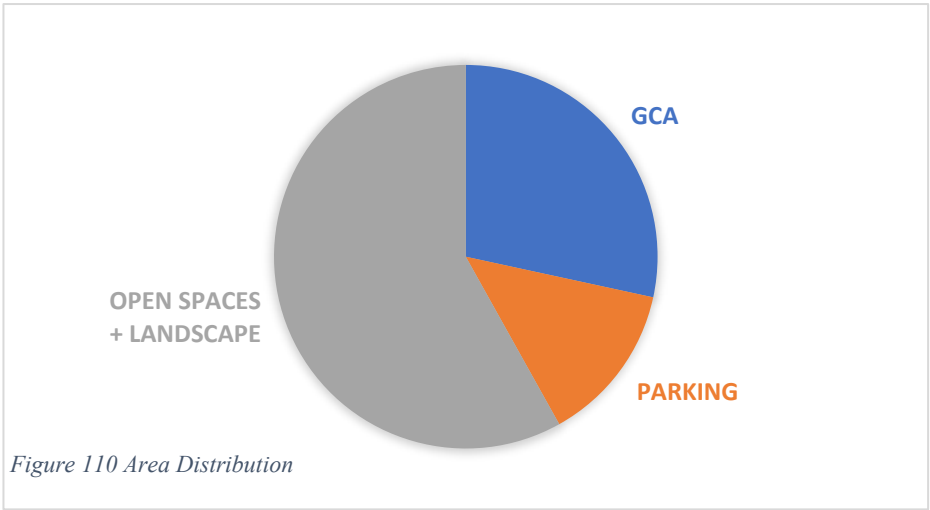


Figure 110 Area Distribution

7 CHAPTER-VII: CONCEPT AND DESIGN DEVELOPMENT

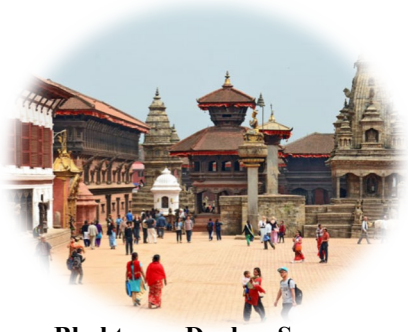
7.1 CONCEPT

The main aim of this project is to create a public space as a common platform to introduce Newar culture to the world by providing a dynamic experience through Newar architecture. It provides a venue for formal and informal performing arts training, such as bhasa and lipi training, pottery and thanka painting, with the aim of promoting Newar literature, language, arts and culture. The center aims to provide a social platform to learn, share, practice, perform, experience and witness the precious Newar arts and culture.

Therefore, the central idea of this project is to protect and promote a valuable handicraft culture that is losing value.

REPLICATING THE TRADITIONAL FABRIC OF BHAKTAPUR

The concept of the project emerges form idea of replicating the traditional fabric of Bhaktapur while being modern in functional, construction technologies, and utility. The three major squares of the Bhaktapur i.e., Bhaktapur Durbar Square, Taumadhi Square and Dattatreya Squares are taken as the reference for the concept of the project. The activities that are prevailing in the daily basis in those squares are replicated through the major functional activities of the culture center. Similarly, the concept is derived from studying the traditional Newari settlements patterns, living style, culture and the urban elements of the traditional city Bhaktapur.



Bhaktapur Durbar Square:
- **Museum**, **Temple**, **Hiti**
- Center of hierarchy

Taumadhi Square:
- Temples, **Sattal**, **Dabus**
- Belbivah, Jatra

Dattatray Square:
- Temples, **Sattal**, Hiti, **Dabus**
- Cultural dance, Bhajan

Figure 111 Prevailing activities of the three major squares of the Bhaktapur

Source: A fusion of tradition and uniqueness

7.1.1 Design Approaches

Approach-1: Identity of Urban Characteristics of Newari Town

The residential neighbourhood and private residential squares form a neighbourhood public space organized around a courtyard. With several streets culminating in the Newari town, the market square represents a neighbourhood public space formed at the street intersections. This street square reflects a nodal point of a town.

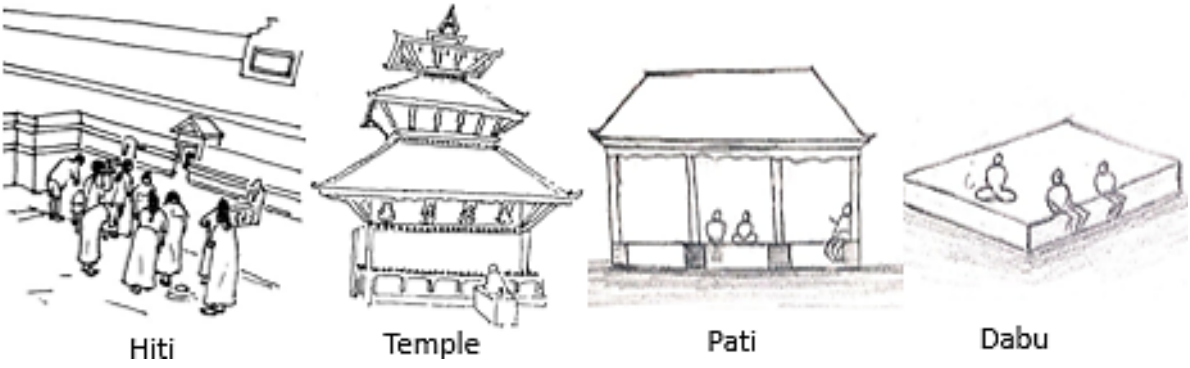


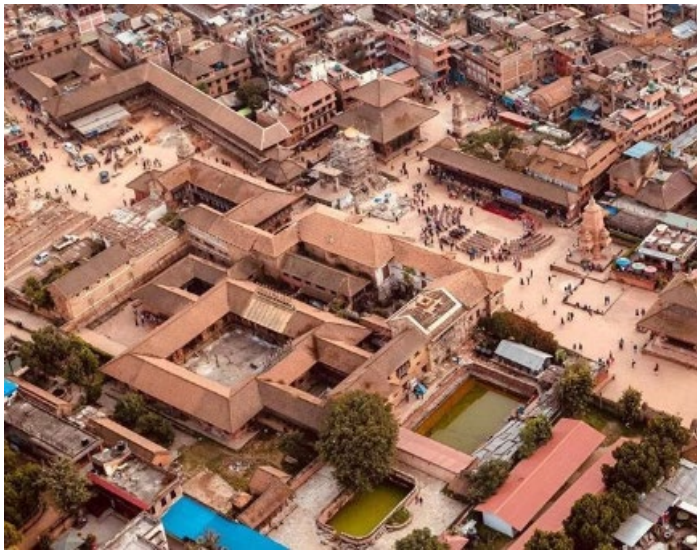
Figure 112 Elements of traditional Newari towns

Providing the elements of traditional Newari towns in the design

Approach-2: Identity oriented Built Form Spaces and Typologies

Through adaptive use of traditional design elements, constructed forms can create harmony between young people learning the arts and artisans teaching the arts. This balance increases the productivity of students and teachers helping to create an enriching informal teaching and learning environment. Traditional design elements such as pitched roofs, cornices, beautifully carved wooden columns, exposed brick façades and traditional plazas convey the essence of their hometowns while providing comfort for different generations.

Gully and Alleys



Interconnected built form

Figure 113 Attaining Traditional Identity through
Source: top-10-things-to-do-in-bhaktapur

Making the interconnected built spaces in the design with the provision of alley and gully to represent the built spaces of Bhaktapur settlement pattern.

Approach-3: Principle of Interaction

Due to rapid modernization and adaptation to change in society, native culture and tradition are on the verge of disappearance. However, change is good, until it takes away the real charm. In the present context, when younger generation is adapting to new changes, due to concentration on new pursuits, today, urban society have somewhat lost the connection with the nurturing of nature and traditional values. The older generation is well equipped with knowledge whereas new generation is beginning to rise. So here the gap between the older generation and the upcoming new generation has to be connected via youth which is the major link between these two generations. Active interaction will help to lessen the gap between the two generations and hence help to carry on with the flow of knowledge about what the culture has to teach us.

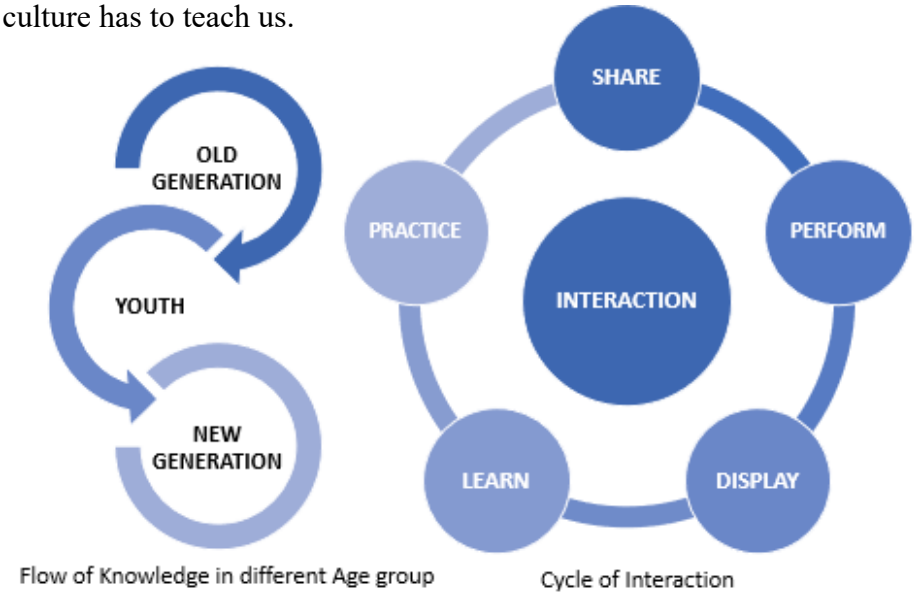


Figure 114 Principle of interaction

Approach-4: Seating Everywhere

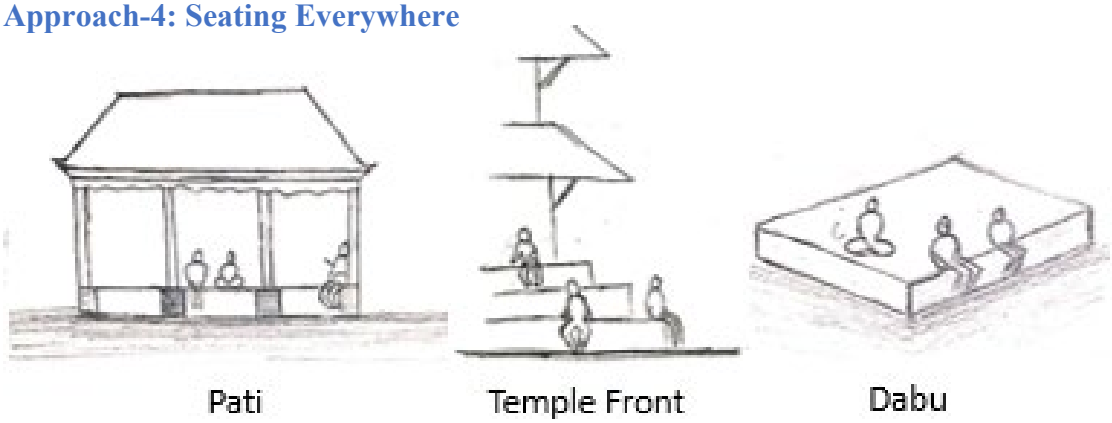
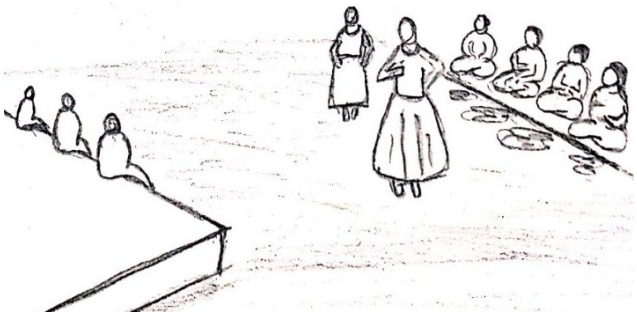


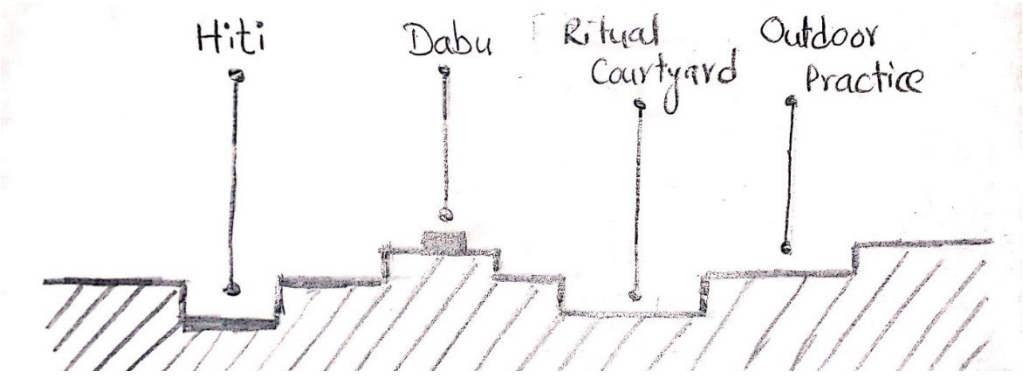
Figure 115 Seating Everywhere

Integration of seating everywhere concept by providing the space for seating in public rest house, plinth of temples and the Dabali and its front.

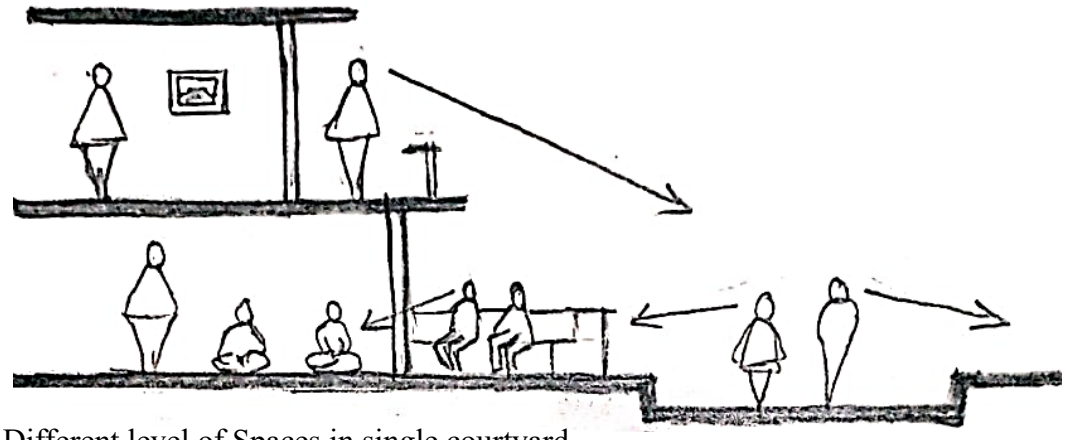
Market Square to replicating the feeling of markets on gully in Bhaktapur town



Ritual Courtyard with the space for performing various types of rituals like bratabandha, belbibaha, jatras, etc.



Balance between mass and void playing with different levels on the site



Different level of Spaces in single courtyard

Figure 116 Concept exploration through sketches

7.2 ZONING AND PLANNING

Learn, Perform and Display are the three major functions of this culture center. The Learn section includes the training center whereas the Perform section includes the space to perform learnt activities which includes multipurpose hall and auditorium. And the Display section includes the galleries both permanent and temporary, demonstration with handicraft workshop for visitors.

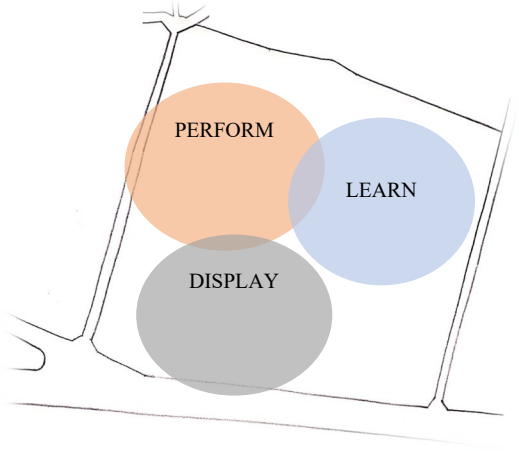


Figure 118 Three Major Functions of Cultural Center

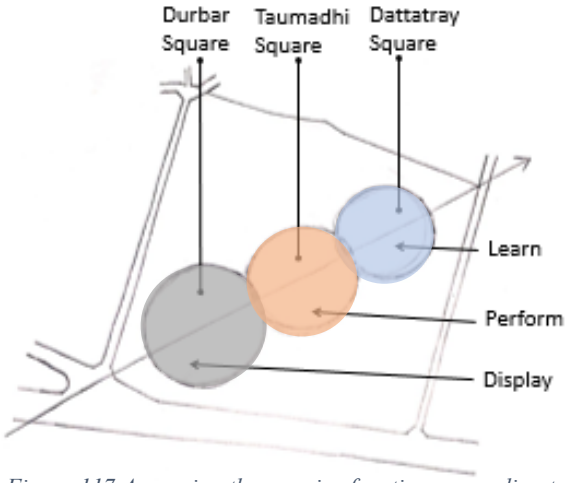


Figure 117 Arranging three major functions according to the activities of three squares

These functions are spread around the three squares as per the prevailing activities of the squares. Since the major function of Bhaktapur Durbar Square is museum, so the square includes display blocks. The major function of Taumadhi Square is ritual performance like jatras, belbibaha etc. so it represents perform section in the design. And the last Dattatray Square accommodates the learn section as Dattatray square represents place for performing dances and music. All the other supporting functions are placed around these major squares as per the requirements.

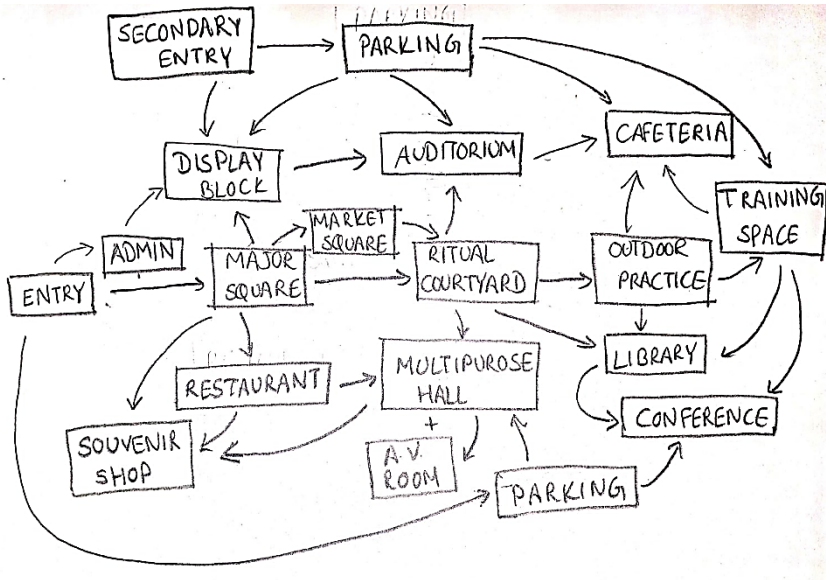


Figure 119 Functional Connection of all the Functions of Culture Center

The major square work as the public zone followed by ritual courtyard as semi-public zone and outdoor practice area as the private zone. Hence, the major square contains admin block, display block and the restaurant which is placed near the entrance. Similarly, the ritual courtyard accommodates the functions as multipurpose hall and the auditorium whereas the outdoor practice area encompasses the training block and the library areas that lies at the back area of the site away from the traffics.

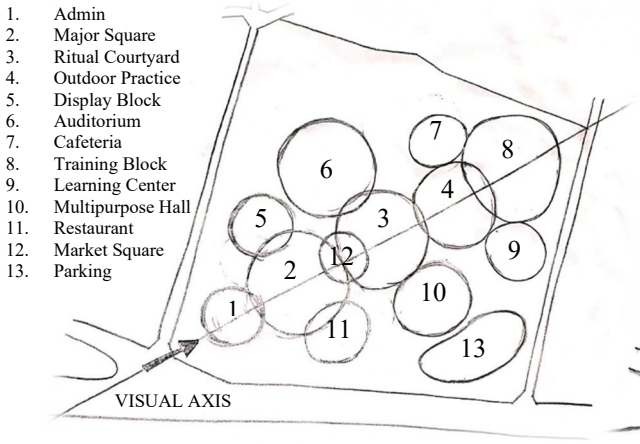


Figure 121 Basic Zoning of the functions

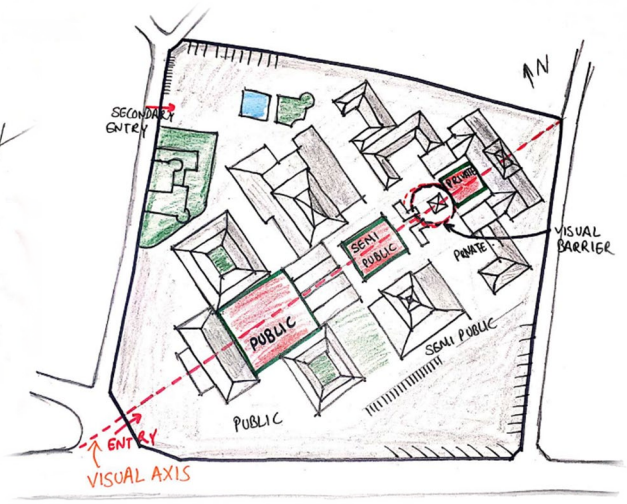


Figure 120 Conceptual Master Plan

The three squares are organized such that they all lie on the one same line i.e., visual axis that starts from the entrance and ends to the training center making as public, semi public and private space along the axis. Each square ae accessible from the narrow space creating the element of surprise. The public zone i.e., major square is accessible through the admin block whereas the semi-public zone, ritual courtyard, through gully like market square and the private area, outdoor practice area, is obstructed by designing the visual barrier of Temple so that it is not directly visible from the entrance.

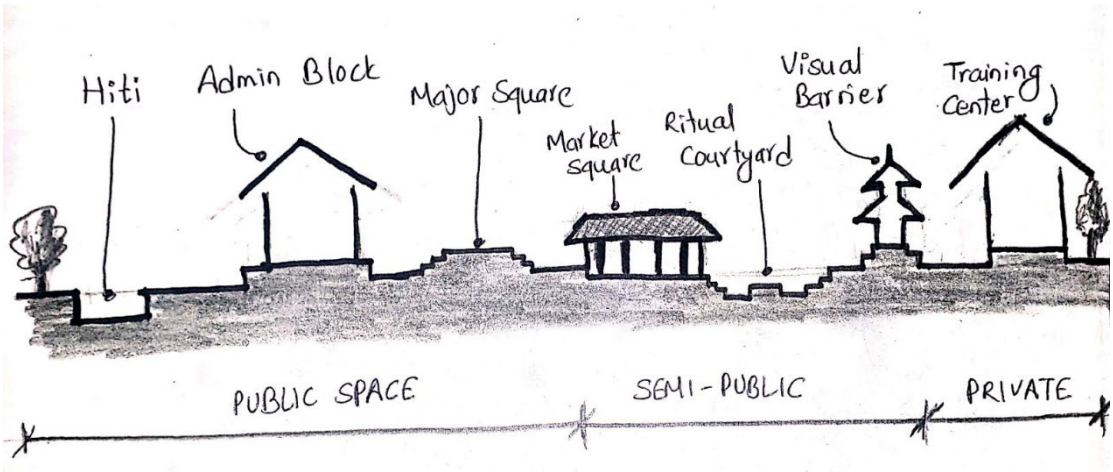


Figure 122 Conceptual Section through visual axis

7.3 INDIVIDUAL FUNCTIONS

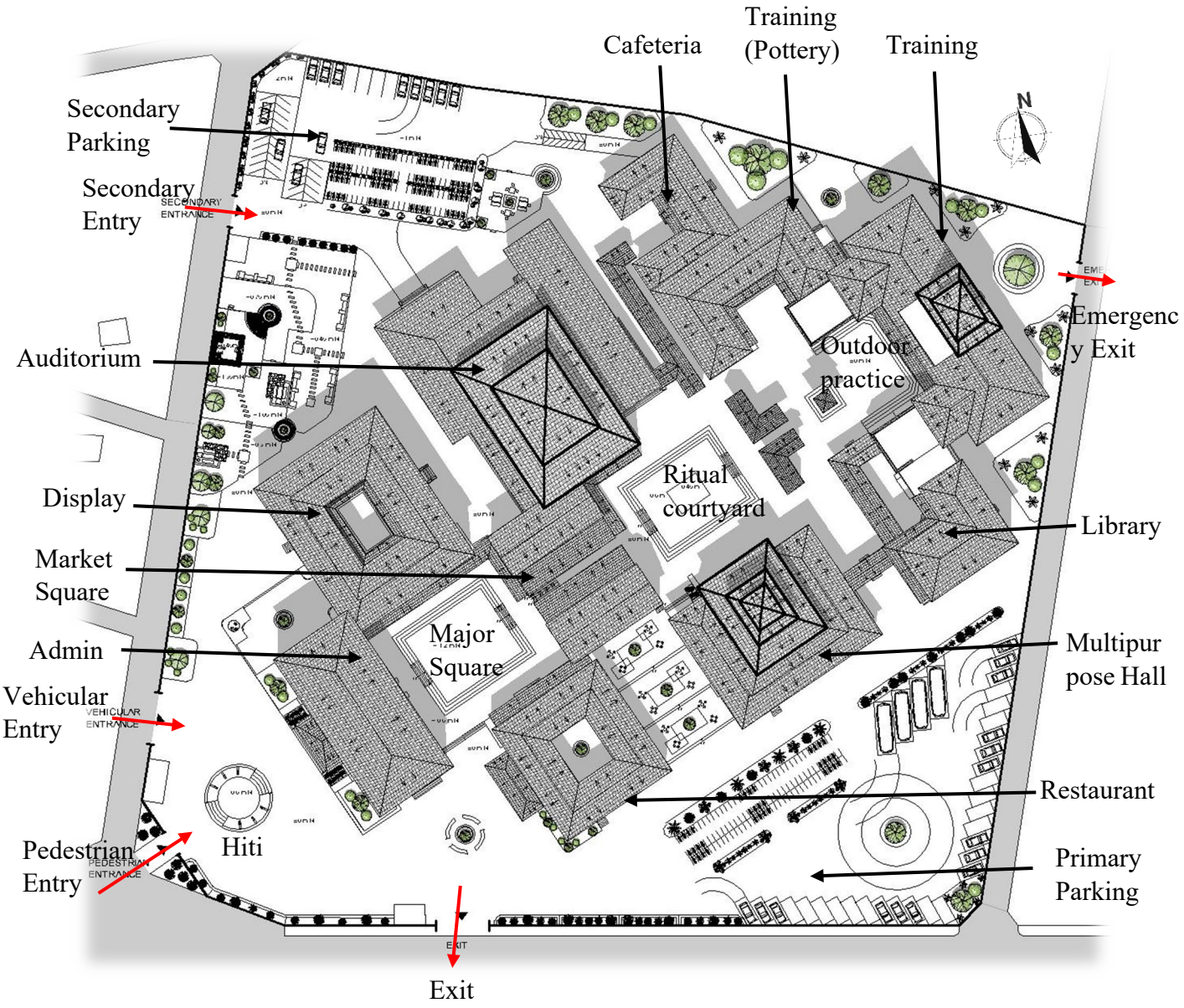


Figure 123 Master Plan

7.3.1 Entry

The main entry is located at the south west corner of the site. The reason for such placement is mainly due to the position of visual axis joining the two corners of the site so as to create the three squares on one single line according to the concept. The entrance is located at the junction of main road and secondary road which has ample space to avoid traffic congestion. Separate entrance is given for the pedestrian and for the vehicles with different exit which is common for both vehicles and pedestrians.

Figure 124 Admin block from entrance

7.3.2 Admin Block

Administration block is located at the foremost part which is directly accessible from the entrance. It is the two storied building which houses all the administrative functions with the clinic and information desk on the ground floor which provides all the necessary information related to the culture center. The admin block acts as the entry gateway to the main inside functions of the culture center through which we can go to different area inside the culture center. (Refer to Annex AR-10 (a))

7.3.3 Major square and Display Block

Major square represents the activities of the Bhaktapur Durbar Square. It acts as the open exhibition space when exhibition fair is taken place in the culture center. Seating spaces are provided by raising the platforms creating the Dabali space which works as the public interacting spaces.

Adjacent to the major square, there is display block which encompasses different gallery spaces, both permanent and temporary, related to Newari art and culture like festival and ritual gallery, musical instrument gallery, dance galley and art gallery. Live demonstration of pottery making, Sukul weaving and thanka painting is provided in the display block where visitors not only have provision of live demonstration but also the direct involvement in the workshop if they want to. The self-made object can act as the souvenir for themselves. The block contains its own individual courtyard space serving as the interacting space and sometimes open exhibition. (Refer to Annex AR-10 (b))

Figure 126 Major Square view from exit

Figure 125 Pottery making demonstration in Display block

7.3.4 Restaurant

Restaurant block is placed on the other side of the major square opposite to the display block which also has its own private courtyard. The restaurant provides the typical authentic Newari cuisine for about people with different types of seating spaces. The private room contains the typical Newari seating arrangement i.e., provision of sukul as the seating space. The restaurant houses the visitors of the culture center as well as those who come for the sole purpose of eating Newari cuisine. (Refer to Annex AR-10 (g))

Figure 127 Restaurant Interior

7.3.5 Market Square

Two blocks are provided with the shape and form of one storied Newari house on either side of the street connecting the major square and ritual courtyard which works as the market square of the center. It expresses the feeling of buying things in the gully and alley of Newari towns. The shops sell the typical and authentic Newari cultural dress (haku patasi), Bhadgaunle topi, musical instruments, bhasa and lipi books, Newari ornaments and so on. Bhaktapur city is famous for its Juju Dhau (King Curd). Hence the visitors can enjoy the curd interacting with friends in various seating spaces provided inside the center. The market square has a total of 8 different shops. (Refer to Annex AR-10 (g))

Figure 128 Market Square

7.3.6 Ritual Courtyard and Multipurpose Hall

Ritual courtyard mimics the activities that are held in Taumadhi Square which is famous place for performing various types of rituals. In the present context, there is the provision of communal ritual activities like bratabandha and belbibaha. The ritual courtyard provides the space for such communal ritual activities in both close and open spaces. Open ritual activities are done in the sunken courtyard which has Dabali and the seating spaces for the visitors.

A multipurpose hall of capacity 200 people is provided adjacent to the ritual courtyard for performing such activities in the closed space. There is the culture of providing prasad (food) for the audience as well as the performers, hence separate kitchen is provided. During off season when such activities are not held, the visitors can watch the rituals of Newar from birth to death in the audio-visual room where a short clip of such rituals are shown digitally for a group of 24 and 18 people in two different rooms. Three step

pyramidal roof with steel truss is provided so as to create balance between horizontal and vertical planes. (Refer to Annex AR-10 (d))

Figure 130 Ritual Courtyard

Figure 129 Multipurpose Hall

7.3.7 Auditorium

An auditorium of capacity 400 people is provided on the other side of the ritual courtyard where major programs related to the performing arts and other activities are held. The auditorium can be rented to outsiders as well for performing different programs. Hence, separate entrance for auditorium is provided with separate parking spaces of 60 motorcycles, 13 cars and 2 buses. The visitors of culture center can access to auditorium through the ritual courtyard where as outsiders are accessed through the secondary entrance with separate entrance in the building. The block houses the green rooms, rehearsal room and store room along with foyer spaces and seating space. Pyramidal roof with steel truss is provided to create asymmetrical balance in overall site. (Refer to Annex AR-10 (c))

7.3.8 Cafeteria

The common cafeteria is provided for auditorium and training block with the capacity of 100 people. It provides all type of fast food which is directly accessible through the secondary entrance. (Refer to Annex AR-10 (g))

7.3.9 Library Block

Library block is located adjacent to the training block which acts as the learning center for the students of training center. A conference hall of capacity 50 people is provided in the library block where small programs like talk show, meeting among the whole culture center etc. are conducted. The library blocks encompass reading section, audio-visual room, e-library and lending and reference sections of books. The library block is mainly for training center but is also available to the public which is accessible through the main parking area as well. (Refer to Annex AR-10 (f))

7.3.10 Training Center

The training center is a two-storey building located at the north east corner of the site which is the end point of the visual axis. The center shares the parking space with the auditorium. This training center provides training courses of 3-6 months for music and dance courses along with thanka painting and pottery courses whereas 1week package course, 15 days package course like courses are available for bhasa and lipi. The facility will provide space for 96 students with both theory and practical classes. (Refer to Annex AR-10 (e))

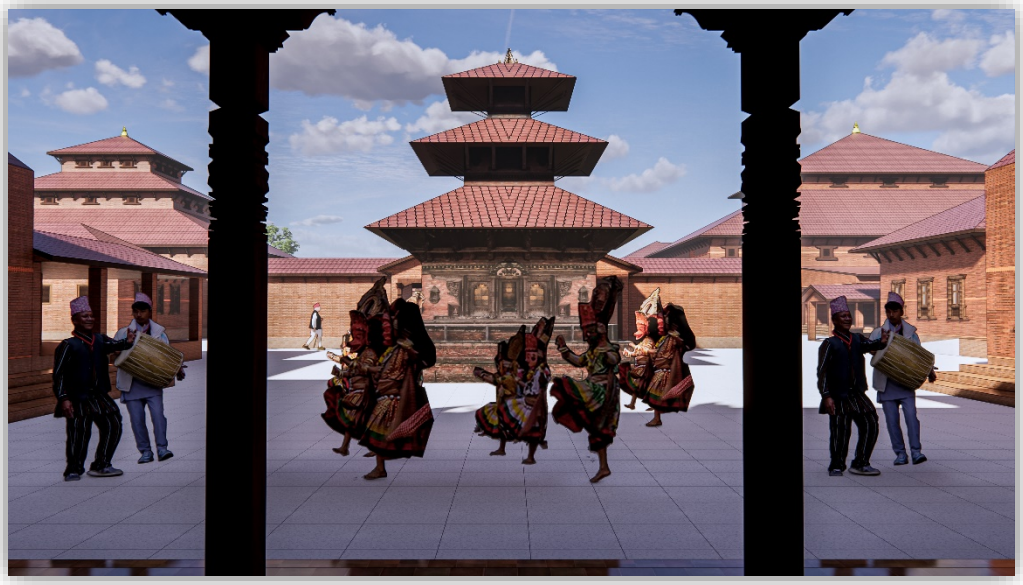


Figure 131 Outdoor Practice view from training block

7.3.11 Landscape

Landscape is done at the north west side of the site near the secondary entrance. Here, ground level is slightly raised creating different levels with the end destination of stone water tap. Various types of seating spaces are provided for interaction of the people. It mainly consists of softscapes which works as the breakthrough from the hard surfaces in the site. (Refer to Annex AR-10 (g))

Figure 132 Landscape view

Figure 133 Aerial View of Newari Culture Center

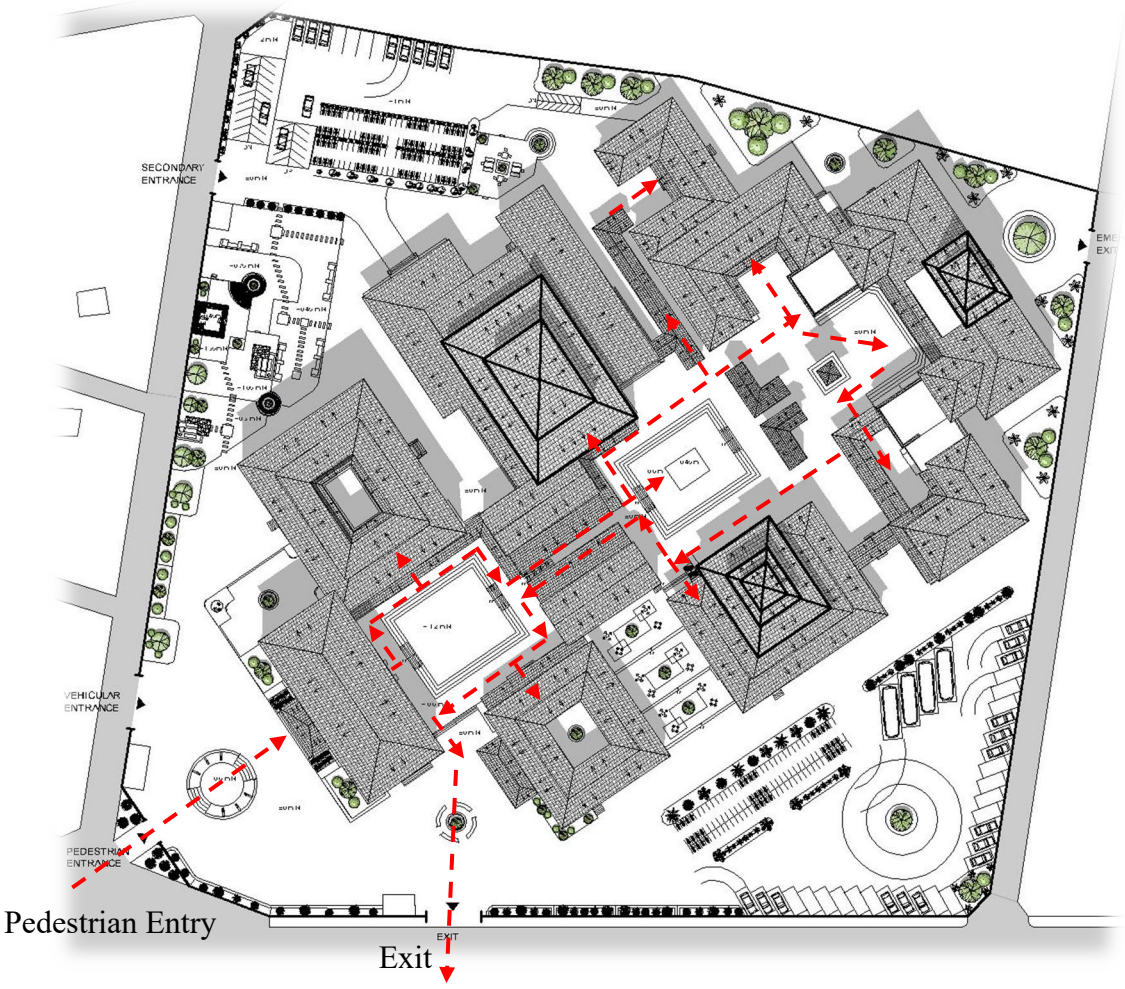


Figure 134 Primary Circulation Pattern of Newari Culture Center

7.3.12 Parking

Two parking spaces are provided as primary and secondary parking. 30 cars, 105 two wheelers and 4 buses are provided in the primary parking for the visitors and for the staffs of admin block. Similarly, 30 cars and 104 two wheelers are provided in the secondary parking for easy access to the auditorium and for training block. Space for loading and unloading of the materials required for the training block is provided in the secondary parking. Secondary parking has the provision of basement parking of height 3m with 18 no. of cars. Surface parking is done above the basement by rising the ground level by 1m.

7.3.13 Design and Materials

The design of the culture center reflects the traditional architecture of the Bhaktapur. Brick is used as the major building material in the design. To enhance the visual aesthetics of building, dachi appa is used on the outer surface of the brick wall made up of ma appa. It is very important to cover up all the structural elements like column, beam and slab to provide the exposed brick surface character. The elements of traditional Newari architecture are vividly used in the design. Intervention of some windows are done to provide the big fenestration with sufficient lights inside the building.

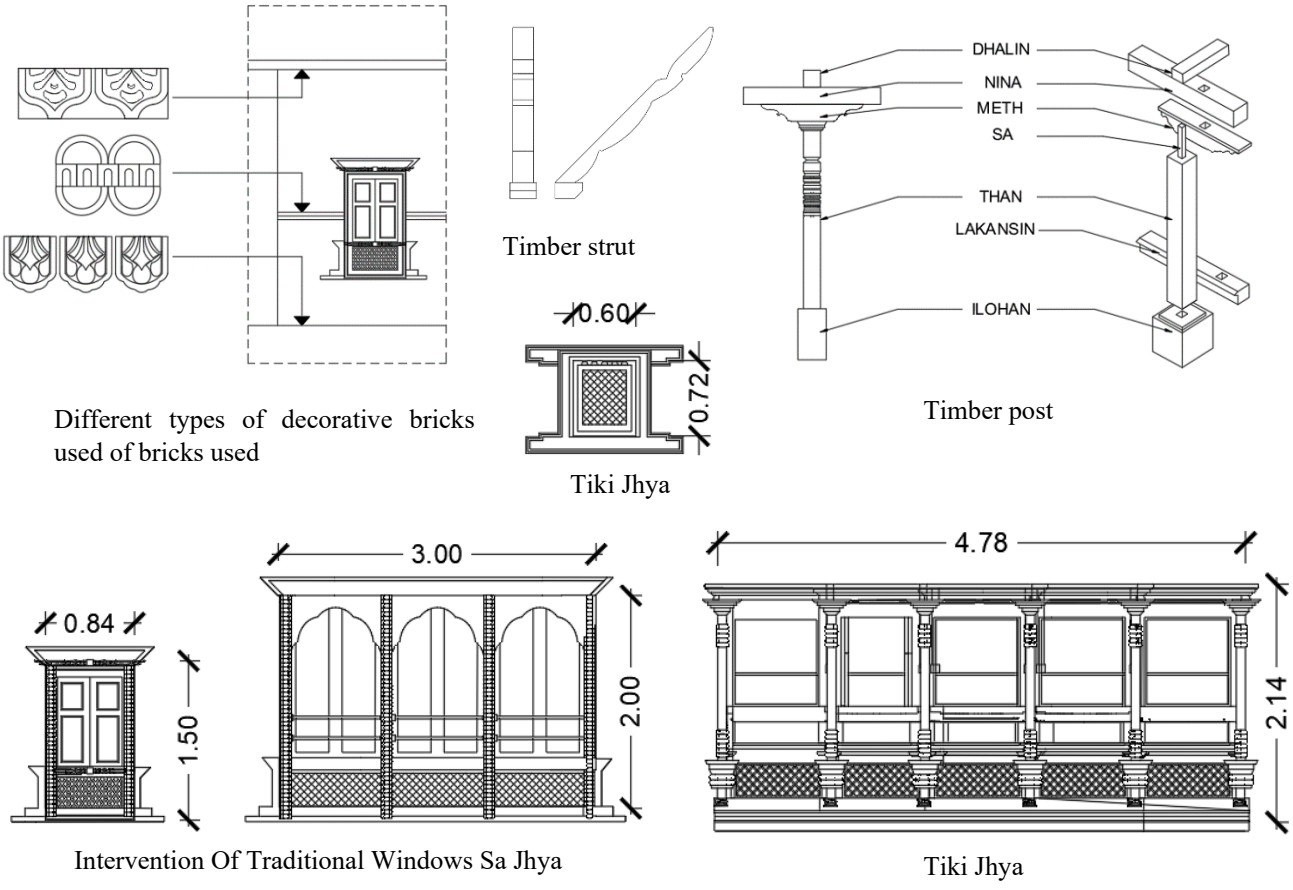


Figure 135 Elements used in Culture Center

Figure 136 Different types of finishing materials used in culture center

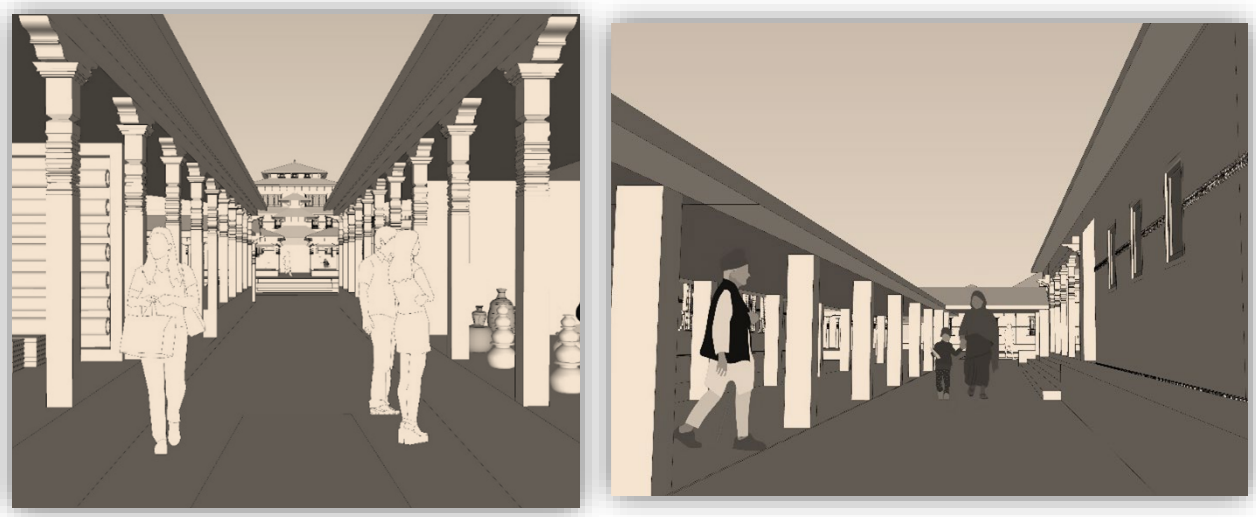


Figure 137 Gully to open space

Figure 138 Seating Everywhere

8 CHAPTER-VIII: UTILITIES AND SERVICES

8.1 WATER SUPPLY

Municipal water line and underground water is the main source of drinking water for the project. The underground will be extracted by the method of boring. Total volume of water required is stored from source in raw water tank. Water obtained through boring is aerate before sending to the raw water tank. The water to be used in the building is then pumped to treatment plant and then into the treated water tank. Then the treated water is distributed directly through the pressure pump.

The water required for firefighting is pumped directly into firefighting water store tank from raw water tank. (Refer to Annex SR-01)

Table 19 Water Demand Calculation

S. N	Blocks	No. of users	Quantity per day	Total lpcd
1	Administration	30	45	1350
2	Display	100	15	750
3	Restaurant	150	50	7500
4	Auditorium	400	15	6000
5	Multipurpose Hall	200	15	3000
6	Library	70	15	1050
7	Conference	50	15	750
8	Training	110	15	1650
9	Cafeteria	100	50	5000
	Total			**27800**

Calculation of Water Tank

- Total Water Consumption per day = 27800L = 28 m^3 approx.
- Size of water tank = 28 x 3 (safety factor) = 84 m^3
- Firefighting requirement (NBC) = 50 m^3
- Total Underground tank = 84+50 = 134 m^3

$$= 8x5x3.5$$

Water for underground tank = 40% municipality supply + 40% deep boring + 20% rain water harvesting

Rainwater Harvesting

The rainwater can be harvested from the slope roofs of the culture center to meet the water demands even in dry seasons. Moreover, harvested water can be used for firefighting, cleaning, for landscaping etc. in addition to sanitary purposes.

Rainwater Harvesting Collection

Only 20% of the underground water tank is filled with the rain water harvesting system. The remaining rain water is drained out from the drainage through gutter and apron drain.

Volume for rain water collection = 20% of 134 m^3

= 26.8 m^3

Size of water tank = 26.8 x 3 (safety factor) = 80.4 m^3 (approx. 81 m^3)

= 9 x 3 x 3 m^3

Annual rainfall = 1.62 m ('Average Monthly Rainfall in Bhaktapur, Nepal (Millimeter)')

Runoff coefficient = 0.75 ('Table 1 . Coefficient of Runoff for Different Roof Types')

The BS 8515 2009 states that the capacity of the rainwater harvesting storage tank must be the least of 5% of the annual rainwater yield.

5% of the annual rainwater yield = 80.4 m^3 (approx. 81 m^3)

Annual rainwater Harvesting Potential = 80.4 m^3/5% = 1608 m^3

or, 1.62 x 0.75 x catchment area of roof = 1608 m^3

Catchment Area of roof = 1323.45 m^2

So, only 1323.45 m^2 catchment area is used for rain water harvesting.

(Refer to Annex SR-01)

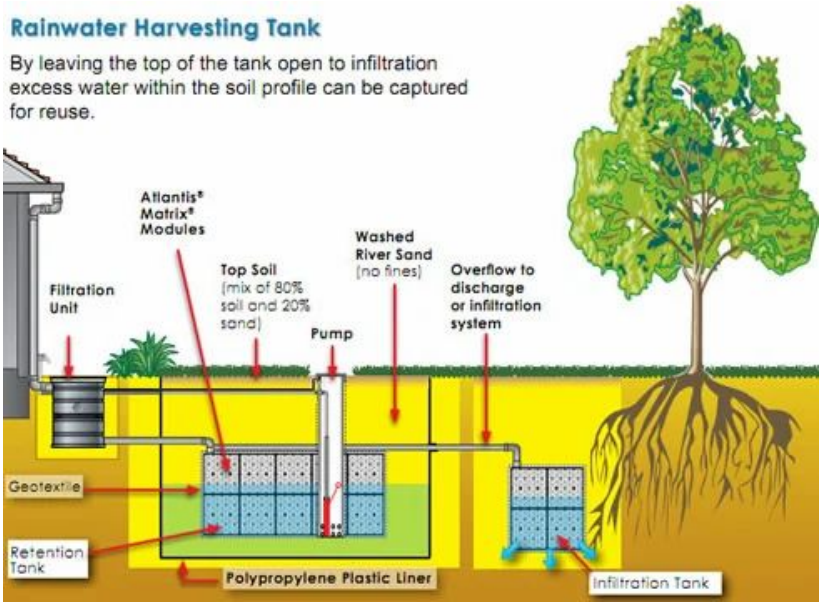


Figure 139 Rain Water Harvesting

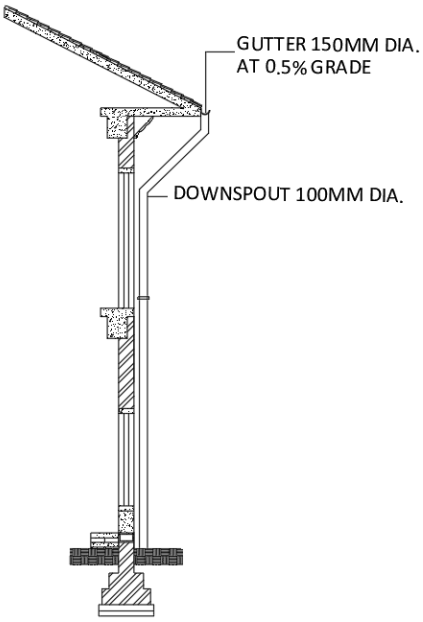


Figure 140 Typical section showing Gutter

8.2 SANITARY

Calculation for Septic Tank

Table 20 Calculation of users for septic tank

No. of Users			
Primary Users		**Secondary Users**	
Administration	30	Restaurant	150
Training	110	Auditorium	400
		Multipurpose Hall	200
		Library	70
		Conference	50
		Cafeteria	100
		Display	50
Total	**140**	**Total= 1020** **30% total = 306**	

Total no. of users = 446

Volume of septic tank required = No. of users x 3 cu.ft
= 446 x 3 cu.ft
= 1338 cu.ft
= 37.88 m^3

Hence,

No. of Septic Tank = 1
Volume of each septic tank = 37.88 m^3
Assuming height of septic tank = 3m
L x B x H = 37.88 m^3
3B x B x 3 = 37.88 m^3
B = 2.1m, L= 3 x 2.1 = 6.3m
Septic Tank Size = 6.3m x 2.1m x 3m
Size of soak pit = 6x sp.6 (Sp.6 = Dia. 5m and depth 2.75) from standard

8.3 FIRE FIGHTING SYSTEM

Provision of series of above ground fire hydrants spaced approximately at 30 meters intervals in loop systems encircling the buildings and around the site periphery is made. Similarly, provision for 1 fire extinguisher per 600 m2 of floor area is considered.

9 CHAPTER-IX: CONSTRUCTION TECHNOLOGY

There is the use of RCC frame structure in the culture center with timber lean to roof system in some part of the buildings. Combination of RCC structure and the steel structure roof was considered for the long span roof of the multipurpose hall and the auditorium and also to provide pyramidal structure to create hierarchy. (Refer to Annex ST-02)

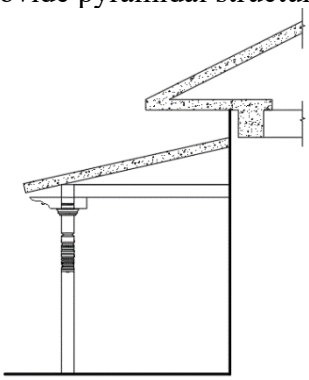


Figure 142 Timber lean to roof system

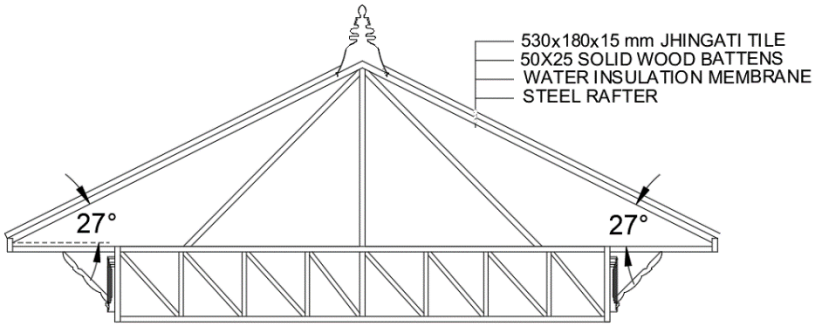


Figure 141 Steel roof truss system

Four types of columns are used in different types of blocks. Columns of size 400 mm x 400mm is used for the single storey blocks with beam size 230 mm x 400 mm and maximum span as 6m. Similarly, columns of size 500 mm x 500mm is used for the two storey blocks with beam size 300 mm x 450 mm and maximum span as 8m. Maximum span of 10m between the columns of size 600 mm x 600 mm was adopted in the rectangular grid with beam size 450 mm x 600 mm for long span structure where pyramidal truss is used. And columns of size 300 mm x 300 mm are used for the covered pathways and plinth projection in some blocks, with beam size 230 mm x 300 mm. (Refer to Annex ST-01)

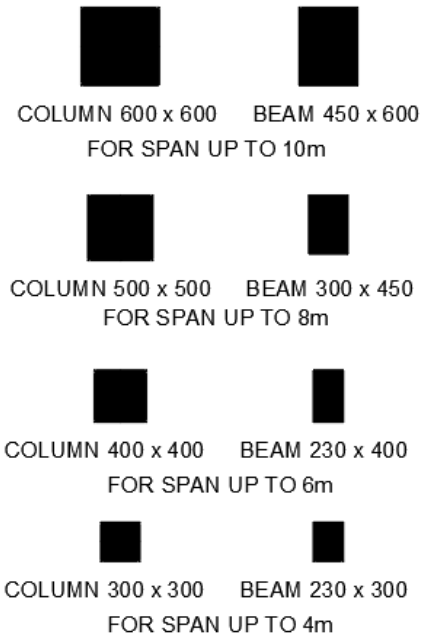


Figure 144 Column and Beam size

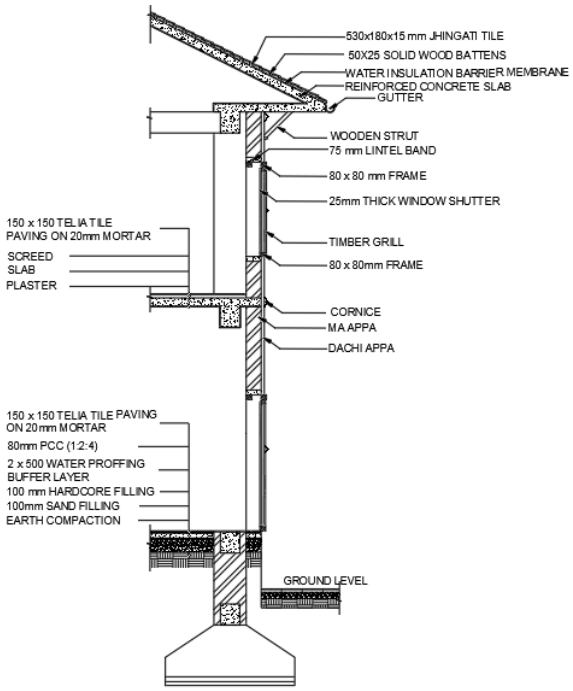


Figure 143 Typical Wall Section

For the roof with maximum span of 20 m RCC structure with steel roof system was adopted, where the trusses of size 40mm and 50mm are used.

Sloped roof system is used by maintaining the slope angle of 27° except some small blocks like market square block and souvenir shop. Expansion joints of 150mm are used in buildings with span more than 35m and in the places where same building need to be separated.

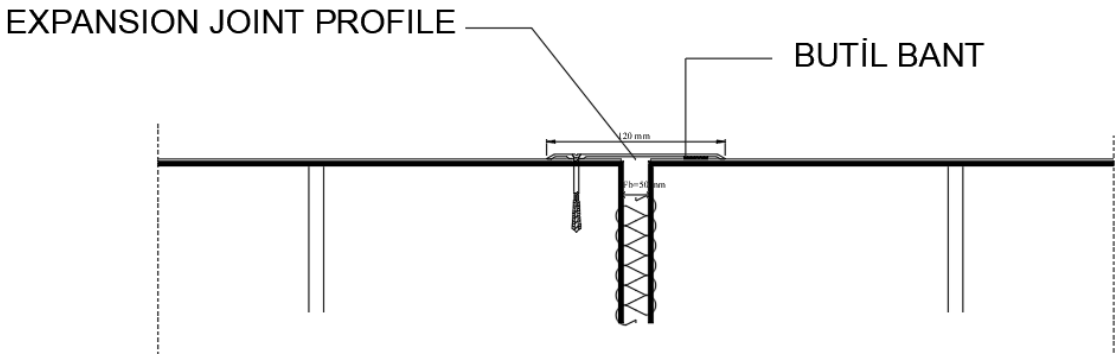


Figure 145 Expansion joint details

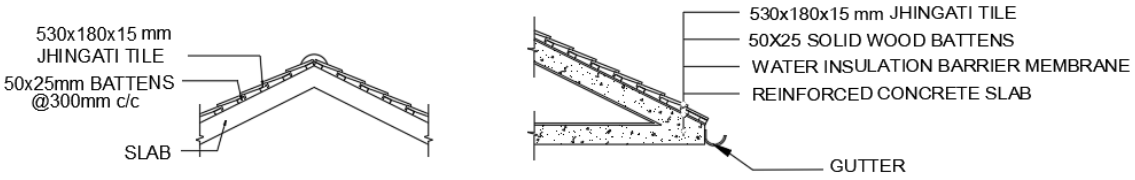


Figure 146 Roof Details at Ridge & Eaves Level

10 CHAPTER-X: CONCLUSION

Newari Culture are all on the skirt of termination as a result of quick globalization and moving social needs. Newari Culture are personally connected to these variables. Centers like Newari Culture Centre will not as it was bolstered Newari Culture but moreover give for sightseers going by the culture center, who have an expanding got to protect their imperative culture, aptitude and personality.

The center will be planned to leave from the ordinary strategy of conservation and offer a comprehensive encounter of the craftsmanship, painting, artisans, and its full culture. While preserving the integrity of the art and culture, the facility offers social grounds to the artists, students, and tourists. Without sacrificing the center's aesthetics, the design of these centers may be made omnipresent, practical, and financially viable.

11 CHAPTER-XI: PHYSICAL MODEL

Aerial View

Top View

Front View

Right View

Left View

Back View

12 CHAPTER-XII: RFERENCES

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13 CHAPTER-XIII: ANNEX (DESIGN DRAWINGS)