

The Pink City Jaipur: Study and Analysis of Historical Forts

Indu Aggarwal^{1*}, Atul Dutta²

¹ Chitkara School of Planning & Architecture, Chitkara University, Punjab, India.

Email: indu.aggarwal@chitkara.edu.in

² Chitkara School of Planning & Architecture, Chitkara University, Punjab, India.

Email: atul.dutta@chitkara.edu.in

Abstract - Royal palaces and forts with big courtyards and corridors, colorful cultural heritage and rich embellishments around picturesque landscape was the motivation behind the research on palaces and forts of Jaipur. Jaipur is a dream city with its deep rooted culture and heritage. The only planned city of its time was built by Maharaja Sawai Jai Singh II in 1727 A.D. and has many splendid monuments. The forts of Jaipur district evolved from the time period of 11th to 17th century. The name to the city given "Gulabi Nagari" or pink city is due to the use of pink sandstone enriching it with an unresisting charm worldwide. The aim of this paper is to understand the ancient urban planning and design of fortress towns and conservation and preservation of heritage buildings in context of increasing tourism. The objective of this paper is to critically analyze the ancient urban planning rules for designing fortress towns to explore the charm and glory, splendor and bright colorful traditions of Jaipur which attracts both in house people and tourists across India and abroad.

Keywords - Jaipur city, forts, ornamentation, heritage, architectural features, ancient urban planning

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INTRODUCTION

Forts symbolize the depth of our huge history. The latin words 'Fortis' and 'Facere' is responsible for the derivation of the term 'Fort' as first name means "strong" and the later means "to make"(Lalwani, 2015). The old Rajputana region now known as the state of Rajasthan has the second maximum numbers of forts in India. The Jaipur itself has six forts located on Aravali ranges. The history of present Jaipur city is related to the time of Lord Ram. It was called 'Matasya Desh' in the past, later established as the kingdom of Kuchhawa Rajput descendants of the prince Kush, Son of Lord Rama. This city has a significant connection with the huge battle of Kurukshetra, the Mahabharata, as the king Virat was ruling here in that period (Singh, 2019).

The purpose of this study is to comprehend the historic urban planning and design of fortress towns, as well as the protection and preservation of heritage

buildings of Jaipur in the context of expanding tourism. Urban planning is not the new concept of modern world but evolving from Ancient times to the Fort architecture when men were living in caves for the reason of protection from climate and wild animals, give us logics of Urban Planning (Gallion and Eisner, 2005). Further, application of principles and rules of urban planning can be analyzed from the ruins of Harappa city (found during excavation by archeologists in early 20th century) to the massive structures of forts erected in the Aravali ranges near Jaipur with the objectives of establishing supremacy and protection from rival territories marked as the symbol of progression of human civilization, connecting the Ancient and Modern world as well (Singhal, 2021). The objective of this paper is to critically analyze the ancient urban planning character for fortress towns, to explore and discuss the architecture, design, and planning of forts & present their rich ornamented cultural heritage,

which must be conserved and preserved in order to expand tourism.

MATERIAL AND METHODS

In 2013, the forts of Jaipur were included among the list of UNESCO of World Heritage sites in the cultural heritage category (Sinha and Rajora, 2014). The material and methods involves study aspects covering five stages-the study of built structures of forts; ornamentation and decoration of forts; the study of landscaping provided around built- up structure of forts; discussing necessities and amenities inside forts and finally the massive fortification defining boundaries of forts. Three forts of Jaipur district are selected viz., the Amber Fort, the Jaigarh Fort & the Nahargarh Fort (Ref. Figure 1 & Figure 2). Amber the capital city on hilltop has existed as fortress town defending the area from rival territories. Later, the other two forts were constructed on adjoining hills to safeguard the capital city of Amber (Ching, Jarzombek and Prakash, 2011). The study is based on observations and analysis of several literatures to ascertain the architectural features of forts and leads to acumen the ideology of their massive built forms and ancient urban planning.

LITERATURE REVIEW

HISTORY

Due to lack of clear proofs and evidences it is not possible to quote the urban planning process of ancient times, but monuments built then are the examples which brilliantly portrays the stories of ancient urban planning methods (Pratap Rao, 2019). The ancient cities like the Egyptian cities, Greek cities, Roman cities, Medieval cities and renaissance cities due to their massive heritage structures are suitable cases for study of ancient urban planning (Singhal, 2021). In India, urban planning took its shape with the start of Indus Valley Civilization in 2500 B.C. considered as one of the oldest civilization throughout globe (Pratap Rao, 2019).

After the extinction of ancient civilization like Indus Valley, the only source of information regarding ancient Indian town planning can be extracted from Vedic texts like Manasara and Mayamata reflecting straight pointers on town planning (Pratap Rao, 2019). The Vastushashtra, written in Sanskrit by Maya a divine architect, consists of rules of town planning for application during practical execution has in depth description under individual heads as Dimensions of towns; The surrounding wall; Places to be avoided; Streets; The Royal capital; Definitions; Forts; Town planning and Bazaars. Ancient India saw abundant

invasions from foreign rulers between 6th to 16th century.

Due to constant wars among kingdoms very less efforts were made in the field of town planning. Prevailing circumstances led to the construction of fortified structures in view of protection from rival territories and the forts, the massive walled structures came into existence (Pratap Rao, 2019).

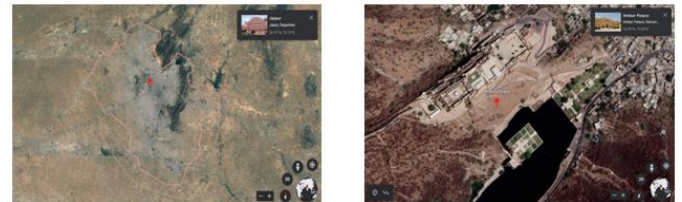


Figure 1: Satellite Images: Jaipur City (Left), Amber Palace (Right); Source: Google Earth

Table 1: Evolution of Human Settlements from Ancient Cities to Fortress Towns. Source: (Pratap Rao, 2019).

S. No.	Topic	Example	Description
1	Ancient Indian Cities	Indus Valley Civilization 2500 B.C.	-broad roads (45feet wide) -fortified citadel (consisting tank, storehouse, halls, and residence for king.) -minor streets at right angle to major streets -single and double storey houses with burnt bricks -bathrooms with drains and inspection holes
2	Ancient Urban Planning Rules in India	Mayamata and Manasara	- Vedic texts on palm leaves written in Sanskrit -give information about directions of town planning
3	Indian Cities during Mughal Period	Forts , Palaces and other monuments across India	-mughals invasion in 16th century -due to constant wars urban planning was restricted to fortified massive forts.



Figure 2: Satellite Images: Jaigarh Fort (Left), Nahargarh Fort (Right); Source: Google Earth

Table-2 Types of Forts, Source: (Pratap Rao, 2019)

S. No.	Type of Forts	Description
1	The Mountain Fort	Built amidst mountain
2	The Forest Fort	Located in dry place hidden in forest
3	The Water Fort	Located in the middle of river or sea
4	The Earth Fort	Surrounded by ramparts of earth
5	The Desert Fort	All around desert, devoid of trees and water
6	The Natural Fort	Having natural defenses around
7	The Mixed Fort	Consisting characteristics of mountain and forest forts

PLANNING AND DESIGN OF FORTRESS TOWNS

Built Structures of Forts

The built up areas of forts were divided into various zones for specified purpose and people living in them. There was specific zones for kings to carry out his official court proceedings, area for interaction with common men, separate female zones, huge area for cooking, and a place for worship. Case study 1: Amber fort was constructed by Raja Man Singh in 1600 A.D. It includes zones like Diwan-i-Aam, Diwan-i-khas, Sheesh Mahal-Hall of Mirrors, Moata Lake, Shiromani Mata Mandir, Singh pol, Ganesh Pol, Sukh Niwas and chahar bagh, Jai Mandir and Jass Mandir (Tadgell, 1990). Materials used for construction of inside structure are sandstones and marble (The Awe-Inspiring Amer Fort | INDIAN CULTURE, no date). Case study 2: Jaigarh fort was constructed by Maharaja Sawai Jai Singh –II in 1726 A.D. Built with Red stone this fort is also known as 'Fort of Victory' fulfilling the purpose of strengthening the defense in that region. It's Zoning plan shows storeroom, sanctuaries, palaces, watch tower and canon foundry symbolizing conspicuous military constructions. There are three main accesses named as 'Doongar gate', 'Awani Gate' and 'Sagari Gate'. To sum up, the Jaigarh fort's zoning layout included many sanctuaries, water pools, museums, amusement zones, residential areas, and towers (Jaigarh Fort Jaipur Rajasthan History & Architecture, no date). Case study 3: Maharaja Sawai Jai Singh –II built Nahargarh fort in 1734 A.D., designed with Indo-European style. The Madhvendra Bhawan inside the palace is a two storey attractive feature for kings and queens to reside (Nahargarh Fort Jaipur - History, Architecture, Visiting Hours, no date). It is India's largest fort and consists of Diwan-i-Aam, nine suits in palace dedicated to each queen connected among each other by wide corridors, grand entrance gates, huge courtyards in between, towers on top and a few temples one of which is dedicated to Naharsingh Bhoomia (World, no date). All these three forts are located in the heart of Aravali Ranges at Amber district Jaipur (Singh, 2019).

Ornamentation and Decoration of Forts

The Amber Fort design follows both Indigenous and Mughal style architecture. The ancient art of stone Jalli is used over fenestrations of forts. The Jalli can be of any patterns like semicircular and triangular patterns, square and rectangular shapes and curvilinear patterns. The ornamentation and decoration can be seen on columns, cornices and arched windows. Rich ornamentation was done on edges, eaves, entrances,

at corners, parapets and roofs along with canopies dazzling with mirror mosaics (Tadgell, 1990). The inside walls have floral pattern carvings and painted motifs. The ceilings are heavily ornamented and decorated with carvings, inlay work and colors. The topmost windows are embellished with rich Jharokhas. The unending boundary walls are finished with kangoore on top. The roofs and terraces have rain water spout carved in single stone sets well with masonry walls. At Nahargarh fort inside walls of the palace are adorned with frescos (World, no date).



Illustration 1: Amber Fort

Illustration 2: Jaigarh Fort

Illustration 3: Nahargarh Fort

Landscaping

Case Study-1: The amber fort landscape has both softscape and hardscape features. It consists of garden, step-wells and bastions. Along with beautiful vegetation the provision of water resources has fulfilled the utility with pleasure. Case Study-2: Jaigarh fort has a square shaped garden named as Charbagh as it is divided into four parts. The fort interior is developed like tetragonal garden and consists of variety of species of flower plants (Jaigarh Fort Jaipur Rajasthan History & Architecture, no date). Case Study-3: The Landscape of Nahargarh fort has the main feature of step-well where rain water is collected through a canal running down from much high hills of Aravalis.

Necessities and Amenities inside forts

Case Study-1: Amber fort is facilitated with sufficient water storage system. The rulers made this system with the combination of ancient Hindu rules and ideas from Mughals. Case Study-2: Water tank at Jaigarh Fort is an indigenous example of hydraulic innovation that came into existence by the efforts of Sawai Raja Jai Singh. The water preserved in the three tanks located at the entrance gate fulfills all the requirement of water, like irrigation, domestic purposes and militaries (Jaigarh Fort Jaipur Rajasthan History & Architecture, no date). Case Study-3:

The Nahargarh fort consists of two asymmetrically designed step wells. One of which is located inside

the built up area and another one is open but within the boundaries (ramparts) of forts (World, no date).

Fortification of forts

Case Study-1: The Amber fort has thick ramparts all around called as fortification. These tall and thick walls were constructed to protect the fort from the attacks from rival territories. Jaigarh fort was built on higher level to Amber fort in view of protecting the capital Amber. Case Study-2: The Jaigarh fort is also connected to Amber fort through subterranean way. The famous Javian cannon is placed on topmost level here. This fort and its fortification was the center of armory. Case Study-3: Fortification of Nahargarh fort is designed as a three point defensive wall all around. The extended fortified wall gets connected to Jaigarh fort which is above the Amber fort (Nahargarh Fort Jaipur - History, Architecture, Visiting Hours, no date).

CONSERVATION AND PRESERVATION OF HERITAGE BUILDINGS

The conservation of architectural heritage need to be analyzed by people, experts, and governments, and holistic conservation of architectural heritage can only be achieved by collaboration among all three levels (Taher Tolou Del, Saleh Sedghpour and Kamali Tabrizi, 2020). Amber Fort, Jaigarh Fort and Nahargarh Fort are among most visited heritage buildings of Jaipur district by both national and international tourists. Preservation & conservation of Amber Fort (Case Study-1) and Nahargarh Fort (Case study-3) is done by government of Rajasthan. 'Amber Development and Management Authority' was formed by the state government under 'Rajasthan society registration Act, 1958' as a registered society in November 2005. Its main aim is to conserve and protect 'Amber Fort' and its surrounding areas. Nahargarh Fort is designated as 'State Protected Monument of Rajasthan' under the 'Rajasthan Monuments, Archaeological Sites and Antiquities Act of 1961'. Jaigarh Fort (Case Study-2) is taken care by royal family of Jaipur as private property and is ticketed and open for tourists. Several government bodies are playing significant duties in the conservation and protection of forts, example- Department of Archaeological & Museums (DAM), Amber Development & Management Authority (AD and MA), The Archaeological Survey of India- Jaipur Circle (ASI), Jaipur Dev. Authority, PWD and Rajasthan Tourism Development Corp. Ltd. The major acts and policies which are related to the conservation and protection of forts and palaces of Jaipur district are: The Rajasthan Monuments, Archaeological Sites and Antiquities ACT, 1961', Rajasthan Tourism Policy,

'Adopt a Monument' (AAM) scheme' The Rajasthan Heritage Conservation Bill', 2014 (Lalwani, 2015).

SCOPE OF HERITAGE TOURISM

In Rajasthan, Jaipur, also known as the Pink City, is one of the most well-known and popular tourist destinations, and it is a major contributor to the state's economic development. More than 18 lakh tourists arrived in Jaipur in the year 2017-2018. The fast growing tourism industry in Rajasthan plays a multifold beneficial role for society, like providing employment opportunities, promoting local handicrafts, regional development, foreign exchange earnings, and development of infrastructure, hence generating revenue. Rajasthan tourism adds 15% to Rajasthan economy and holds 2.7% of the total gross domestic products and 1.9% in providing overall employment opportunity to locals of the state (Kumar Saxena and Gupta, 2020). Case Study-1: Amber fort and palaces located in Amber district, Jaipur are well maintained by government of Rajasthan and it is open for tourist. Case Study-2: Jaigarh Fort is also known as 'Victory Fort' is in a good condition located in Amber district, Jaipur is open for tourist is a private property (under royal family). Case Study-3: Amber district, Jaipur has another fort named as Nahargarh Fort also known as Tiger fort of Rajasthan is maintained well by government of Rajasthan which is also open for tourist. All the three case studies are ticketed monuments and of massive attraction for both Indian and International tourists (Lalwani, 2015). Jaipur city is a royal city and its forts have established royal supreme identity worldwide. These massive structural forms support the dream sovereignty of Jaipur Heritage.

RESULTS AND DISCUSSION

The study carried out led to the conclusion that the forts of Jaipur are some finest examples of marvelous heritage buildings which attract tourists across the world. Rajasthan tourism has a very significant contribution to the entire economy of the state, so promoting tourism of forts and palaces of Jaipur makes it relevant. The comprehensive examination of these three forts under subheads: Built Structures of Forts, Ornamentation and Decoration of Forts, Landscaping, Necessities and Amenities inside forts and Fortification of forts conclude the historical relevance of Jaipur's rich cultural heritage hence needs careful conservation. The methods used here resulted in the development and comprehension of numerous fort features. The geographic position, materials used for building, old urban planning laws, ornamentation, landscape, and

water facility compel us to comprehend the efforts made to develop them. The kind of construction techniques used has kept them standing to this day, which is admirable. The government has passed numerous acts and laws for the conservation and preservation of forts of Jaipur. Various government bodies like the Department of Archaeological and Museums (DAM), Amber Development and Management Authority (AD and MA), The Archaeological Survey of India - Jaipur Circle (ASI) and Jaipur Development Authority are playing very important roles in the conservation and preservation of these three forts. The conservation and preservation will further uplift the tourism graph in future. Various government and semi government agencies are incorporating various tools and techniques into the process to achieve this aim.

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Corresponding Author

Indu Aggarwal*

Chitkara School of Planning & Architecture, Chitkara University, Punjab, India.