

Infill Design in the Historic Precinct of Haridwar

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Abstract—Haridwar is one of the religious and heritage cities of India. The pilgrimage route, which connects the famous Harki Pauri with the Haridwar railway station and Interstate bus terminal is famous for its old “Mathas” and classical style buildings. These elements of the intangible heritage of this route are important aspects of this city. But, today this historic precinct is losing its aesthetic charm due to multiple reasons like loss of architectural identity, increase in demands for infrastructure facilities and because of the rise in floating population. Haphazard growth is both inappropriate and incompatible in any historic precinct. Newer building appearances are creating problems for the architectural harmony of this route. This paper will discuss about the design philosophies and guidelines for working in the historic precinct of Haridwar.

Keywords: Historical environment, Historic Precinct, Infill design, Kineticasthetic image, Image ability, Matha.

1. INTRODUCTION

Historic environment can be defined as the aspects of the environment resulting from the interaction between people and spaces through time. It includes all surviving physical remains of past human activity, whether visible or dormant. (English Heritage)

It can be also defined as a location where pieces of political, cultural, or social history have been preserved due to their cultural heritage value. It usually has a great sense of aesthetic beauty. Historic significance can be classified into two categories such as tangible and intangible. Tangible heritage deals with the touchable substances like buildings or monuments while intangible heritage deals with elements like belief, art, language and culture. A religious city like Haridwar has a unique combination of tangible and intangible heritage.

Historic precinct is an area consisting of important cultural, historic and heritage importance. Surrounding the building, monuments play an important role to maintain the spirit of the place.

The historic environment plays a major role in the economic development through encouraging tourism, and creates employment opportunity for the local the residents. The historic environment contributes to our sense of local and national identity and it creates a tangible link to our past.

Infill design can be defined as any development in a restricted gap between the existing buildings on both sides. It affects the architectural fabric of the concerned area.

2. HARIDWAR CITY

Haridwar is situated in the southern part, in the Indian state of Uttarakhand. Hindu religion has seven holiest places (Sapta Puri) and Haridwar is considered as one of them. It hosts the pilgrimage of eight millions people every year. During Kumbha Mela, millions of pilgrims, devotees, and tourists congregate in Haridwar to perform ritualistic bathing on the banks of the river Ganges. Har Ki Pauri (literally, "footsteps of the Lord") is considered to be the most sacred ghat of Haridwar. This city is also considered as the gateway to the great Himalayan mountains. This city hosts Kumbha Mela and ardh Kumb Mela once in every twelve and six years respectively. The Kumbha Mela is considered as the largest gathering of pilgrims in the world (Sugden, 2013). It is celebrated on four places by cycle: Allahabad (Prayaga), Haridwar, Nashik and Ujjain. Mansa devi temple, Chandi temple are other important temples for pilgrims in Haridwar.

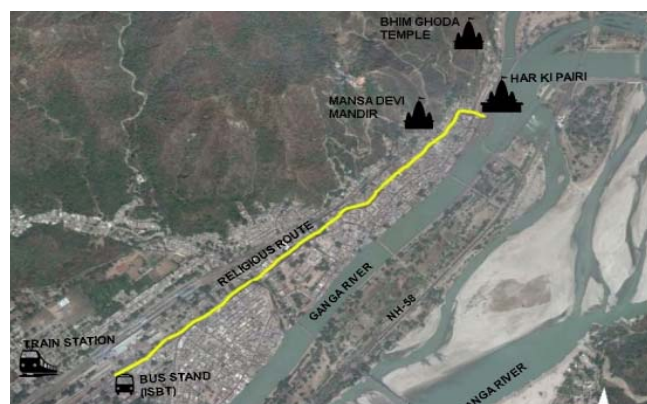


Fig. 1: Satalite image of Haridwar Source- Google earth

3. HARIDWAR AS A HERITAGE PRECINCT

The central public work department has published guidelines for the selection of heritage precinct in 2013. According to its guidelines a precinct or building will be considered as a

heritage precinct (grade II) if it has the status of regional importance, cultural or historical significance. Aesthetic merit and identity or image of the place in the region are the another big criteria for the selection process. According to the above selection criteria Haridwar will be considered as a heritage precinct because of its religious, geographic, engineering importance and as host of the Ardha Kumba and Kumba Mela.



Fig. 2: Har ki Pauri Source- (Author)



Fig. 3: Symbolism of Haridwar. Source- (Author)

4. SYMBOLISM OF HARIDWAR

Kevin A. Lynch used the term "Imageability" to describe the user experience of the city. Every city has certain unique images, which is registered in the mind of the tourists or the visitors. Haridwar is the city of Lord Shiva. Most of the elements of this city are dedicated towards the Lord Shiva. A tourist who visits this city has the image of River Ganga, Ghats, Mathas, temples in their mind. Fig. 3.

5. RELIGIOUS ROUTE OF HARIDWAR

The historic/religious route connects the Harki Pauri to Haridwar railway station and Interstate bus terminal. It has a number of residential, commercial, and institutional buildings. Most of these buildings are commercial in nature and are four storied structures. Ground floor of the commercial buildings is used as shops, restaurants while the upper floors are used as hotels or motels. The other types of buildings are Institutional. These buildings can further be divided as Government buildings and "Mathas". The length of this stretch of road is 2.1 kilometers and the average width is 10m. Land use map of this route is given in Fig. 4

6. BUILDING CHRONOLOGY

Religious/historic route of Haridwar has developed in the last two centuries (Lochtefeld, 2010). This route has buildings of different eras, architectural styles. Most of the institutional buildings like "Mathas" are hundred years old. Development of commercial buildings like hotels, restaurants is 30 years old.

7. STREETScape IMAGE OF RELIGIOUS ROUTE

Streetscape is the representation of street and its surroundings. It is an important aspect of urban design and it provides the image of the precinct. As the religious route of Haridwar is surrounded by buildings of different typologies and styles and heights, so it provides a mixed streetscape image of the city. The streetscape image of the religious route of Haridwar is given in Figure-6.

8. KINAESTHETIC EXPERIENCE OF HARIDWAR

'Kinaesthetic experience' is experienced while moving through a space over time. It is an important aspect of visual aesthetic dimension. Religious route of Haridwar provides a set of exuberant images. (Fig. 7)

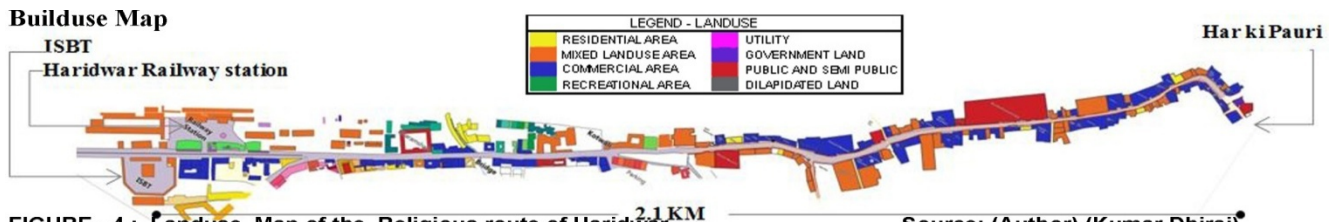


FIGURE - 5 : Building chronology Map



Fig. 6: Streetscape image of the religious route of Haridwar Source: (Author)



Fig. 7: kinesthetic experiences of the religious route of Haridwar Source: (Author)

9. CURRENT ISSUES OF HARIDWAR PILGRIMAGE ROUTE

The population of Haridwar has increased significantly in last few decades, which causes expansion of the city. These are causing the diverse effect on the old historical sites. An increase in commercial spaces such as shops, showrooms, restaurants has increased significantly in the historic sites. It causes problems like traffic congestions and kiosks in the historic sites. Existing old physical infrastructure is insufficient to cater the increase in population, and it leads to severe service problems in the core areas. (Rai, 2008)

This pilgrimage route has a number of historical buildings, which are important aspects of this city. Hesamaddin Sotoude has mentioned classified historical buildings as the tangible heritage of the city (Hesamaddin Sotoude, 2013). Currently, this heritage route is experiencing many interleaved threats, which results in the desertion of these areas, the loss of cultural heritages and unsustainable practices. The Urban grain of the religious route of Haridwar has changed significantly in last few decades. From the image of a religious route, it has become a commercial route. Lack of guidelines is causing confusion in the mind of the owners and designer to make a new style of design, which has no relation with the historic precinct.

Haphazard location of street scape elements like electricity poles, wires, singes, visual merchandising, etc. is causing loss of the visual aesthetics of this route. Lack of designated parking areas, vendor areas makes this route congested.

10. DUPLICITOUS ROLE OF TOURISM:

Tourism is a major industry in for Haridwar city. Every year, millions of pilgrims visit this place. Increase in tourism encourages the commercial activity in the historic site. According to James Marston Fitch, tourism has a bipolar role in the heritage sites (Fitch, 1982). It is an asset as well as a threat to the heritage preservation. Demand for the physical infrastructure has increased, according to the rise of spiritual tourism. Increase in tourism during the height of tourist seasons creates threats to the physical fabric of the site. Construction of commercial spaces such as hotels, shops are the results of the increase in demands of physical infrastructures in Haridwar. Lack of guidance, bye laws and ignorance of the owners, designers of local architectural styles causes haphazard constructions in the historical sites. Balance between the old monuments and the new developments are highly essential for the smooth functioning in the heritage site.

11. ARCHITECTURAL STYLE OF HARIDWAR

Haridwar is famous for its ghats and old architectural style buildings. Some of the buildings are two hundred years old and are used as an inn or shelters for the pilgrims. This pilgrimage route is surrounded by buildings of different architectural styles (figure-8 and 9). All the old buildings exhibit exceptionally ornamentation in the form of façade treatments. Multi centred arch shaped main entries, projected balconies supported by beams, and decorated facades are the typical characteristic elements of all the old buildings. These old buildings seem, as it is the mixture of Mughal and Rajastani architectural styles. Identification of new buildings can be done on the basis of the façade treatment contrary to old buildings. New building characteristic elements are such as plain façade, structural glazing, aluminium panels, etc. Buildings on the pilgrimage route can be broadly classified into two different categories such as classical style, and contemporary style buildings. The difference between both styles of buildings can easily be understood. Both kinds of building are located on the same route adjacent to each other (Fig. 5). Aesthetic and tourism are closely related to each other and preservation of classical styles in a heritage precinct increases the spirit of the space.

Classic style buildings on pilgrimage route from Haridwar

Classification of buildings on the pilgrimage route of Haridwar can be done on the basis of building materials, architectural styles, and type of uses.

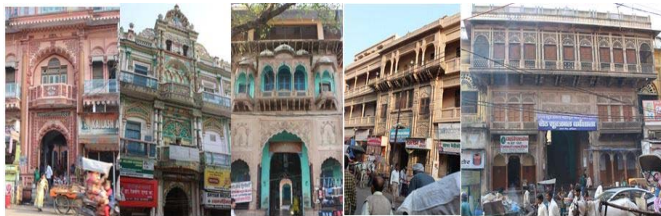


Fig. 8: Classical style building. Source-(Author)



Fig. 12: Classification of buildings of Roorkee According to Michael Davis’s definition. :(Author)

12. DILAPIDATED BUILDING

Many buildings on the religious route are in dilapidated conditions. These buildings need immediate preservation. (Fig. 11)

Michael Graves discoursed that “infill design in the historic environment can be separated by two extreme extents such as extremely historic and the extremely modern. Everything else fits somewhere in between on a sliding scale, and it is possible to place any building on the scale to determine its stylistic relationship with its surroundings”.

Contemporary buildings of the pilgrimage route in Haridwar



Fig. 9: Contemporary Buildings. Source:(Author)

He classified design in five different styles such as pastiche approach, arrogant approach, subtle approach, traditional approach, a Modern approach. Based on Michael graves’s definitions, classification of the pilgrimage route buildings is given below in Fig. 12. According to Michael Davis' lack of aesthetic awareness of insignificant manner architecture composed of water down or simplified components lifted from the past. (Davies, 2003)

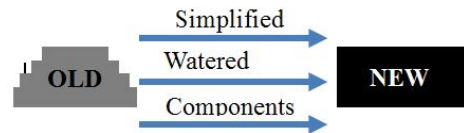


Fig. 10: Transformation of Styles. Source-(Davies, 2003)



Fig. 11: Dilapidated old buildings Source:(Author)

13. WORKING IN THE HISTORIC ENVIRONMENT

It is always a challenging job for a designer to work on historic sites, as historic sites are associated with public sentiments. The proposed design by an architect or designer is

always under a constant scrutiny from the society. Vitality and viability are the two important parameters for any proposed design (Abdullah, 2008) and these parameters are important for the responsiveness to that particular environment (Bentley, I, 1985). The planning authority has a number of guidelines for the constructions, but no particular guideline for the new works in the historic site.

Infill design in a historic environment depends upon a number of factors such as the aspirations of the building owner, the cost of the project, the aesthetic sensibilities of the planners, and the skill of the designer, availability of materials and so on. Balance between diversity and compatibility varies from one case to another, so there should be different types of approaches for individual project by the architect-preservationist. Understanding of the context and characteristic elements is highly essential to maintain the visual harmony of the historic precincts.

There are a number of ways to design new buildings in a historic site. It can be a direct copy of architectural elements from the surrounding buildings, or it can be a new form, that will enhance the visual perception of the old building. Hesamaddin Sotoudeh, Wan Mohd Zakri Wan Abdullah categorised the construction of a new building near the historical buildings in two different categories such as “**Replication** and **Contrast**” (Sotoudeh, 2012). According to these researchers the replication method deals with the copying of architectural elements of the old building to the new building. This degree of replication may vary. Michael Davis classification of infill design of the historic sites has already been discussed before in this paper. Out of the five methods (pastiche, arrogant, subtle, traditional, modern), subtle approach is the best method of working on same historical sites (Davies, 2003).

The “Central Public work department” in his “Handbook of Conservation of Heritage Buildings” has described certain byelaws to maintain “skyline” and “architectural harmony” of the historic precinct. It also provides incentives to the private owners for maintaining the above said characteristics of the historic precinct. (CPWD, July 2013)

There are eight principles for designing new development in the historic environment. A correct balance of these principles will help in producing successful infill designs in historic environments. These principles are such that “Urban structure, urban grain (street pattern), Density and mix, Scale, Materials and detailing, Landscape, Views and landmarks, Historical development”. (Historic Scotland)

Character – All historic buildings of Haridwar have certain similar characteristic elements (Figure). Alterations to the built environment over time disturb the relations between the past and the present and this forms an environment without harmony or unity. Infill design requires a careful analysis and

evaluation of characteristic historic elements. Architectural elements of Haridwar classical buildings are given below:

- **Multicentre arch entries**- Most of the old buildings and mathas have multicentre arch entries. This element of the architecture has resemblance with entries of the Mughal buildings and mosques. These entries are double height entries, which provide a grand entry to the buildings. (Fig 12)
- **Projected balconies**- Projected balconies above the multi-centered arch are other important features of classical style buildings. Horizontal members support these balconies. (Fig. 13)
- **Motifs/ Murals**
Motifs are another important element of Hindu architecture. Old structure has some design of motifs on their external walls. (Fig. 14,15)



Fig. 12: Multicenter arch entries



Fig. 13: Projected balconies. Source-(Author)



Fig. 14: Facade articulation of old mathas Source-(Author)

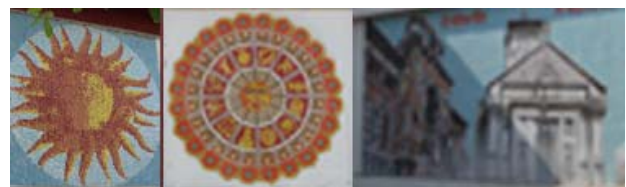


Fig. 15: Murals of Haridwar. Source - (Author)

Scale – It is one of the most important factors in infill design. Infill design should be according to the scale (height, grain, density) of the existing building. Conceptual infill design of the historic precinct of Haridwar is given below (Fig. 16)



Fig. 16: Facading (Existing vs Conceptual). Source-(Author)

Material and colors- Availability and affordability of materials play an important role in sustainable design. Infill design should recognize the materials and colors of the adjacent historic buildings. But it is not compulsory to copy the colors and materials of the old buildings. New materials can be used in the infill design if they're harmonious in proportions and details of the surrounding historic context.

14. GUIDELINES FOR INFILL DESIGN

Height of the new building should be in accordance with the adjacent old buildings.

Long term heritage conservation plan is essential rather than small term plans for the heritage city of Haridwar.

The lifespan of the materials & use of technology is very important for conservation works. All historic building materials are not durable (example – iron cramps in masonry, galvanised windows).

Dilapidated buildings should be considered for preservation and unstable structure should be demolished without affecting the adjacent buildings.

15. CONCLUSION

The design is very subjective. There is no fixed formula for a design that will be accepted universally. Still combination rational thinking and sustainable practices make a design useable, preferable over other designs.

Developers, designers and owners need to make conscious efforts about the visual harmony of the historical sites and it should be maintained for the future.

Infill design should aspire to a quality of design and execution which may be valued both now and in the future. This neither infers nor excludes working in traditional or new styles, but it should in a way respect the significance of a place in its setting. Perception of the users and the local residents should be considered during the developments of the infill design

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