



Transition from Vernacular to Modern Architecture: Gurgaon, India

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ABSTRACT: Gurgaon is a city in the Indian state of Haryana, located in the National Capital Region (NCR) of India. Witnessing rapid urbanization, it has become a leading industrial and financial hub with the third largest per capita income of India. In the last twenty years, it has turned from a sleepy village of humans, houses and buffaloes to a city of multinational towers and apartments. There is certain ‘sameness’ in the architectural manifestations all around, depriving human habitats of cultural and regional identity. The objective of the paper is to study this change in architectural practice wherein the new wave of technology, with its multidimensional effects, is responsible for the creation of the global and homogenizing culture in the field of architecture. Several vernacular as well as the contemporary dwellings of Gurgaon will be documented and analyzed on various parameters of culture and architecture. It will call for the integration of vernacular and modern in the contemporary design while devising an environment and people friendly architecture where technology is used in monitoring, controlling and governing the infrastructure, rather than creating one.

Keywords: urbanization, globalization, culture, architecture, vernacular, modern, sustainable development

I. INTRODUCTION

Gurgaon is a city in the Indian state of Haryana and is located near the National Capital Region of India. It is 32 kilometres southwest of New Delhi and 268 kilometres southwest of Chandigarh, the state capital.

Haryana is divided into four divisions for administrative purposes: Ambala, Rohtak, Gurgaon and Hisar. Within these there are 21 districts and Gurgaon district is one of them. Gurgaon city is the administrative headquarters of the district. As of 2011, the city had a population of 876,824 and a total area of 738.8 square kilometres.



Fig. 1. Map of Haryana.

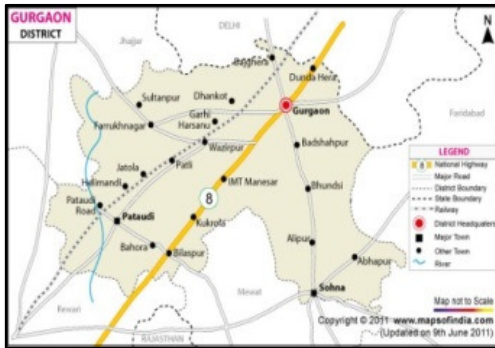


Fig. 3. Map of Gurgaon.

II. HISTORICAL IMPORTANCE OF GURGAON

This was the village that is believed to be the one that *Yudhishthir*, the eldest of the *Pandavas*, bequeathed to *Dronacharya*, his Guru, in the epic Mahabharata. It is also believed that here, *Dronacharya* delivered spiritual as well as military instructions to *Kauravas* and *Pandavas*.



Fig. 4. Rural menfolk enjoying 'hukka' in the verandah.

Haryana is a hub of diverse races, cultures and faiths. The people here are mainly Hindus, Jains, Buddhists, Sikhs and also Christians. Haryanvi culture has been influenced by Lord Krishna in many ways.



Fig. 5. Cattle Sheds in the house.



Fig. 6. Bonfire in the courtyard during 'Lohri'.

As peacock feather was always visible in Krishna's crown, it is put on the top of the *havelis*. *Kadamb* trees and mountains that were depicted at the back of Krishna are very common in Haryana. Cattle that is generally shown with Krishna is worshipped and people here are known for the abundance of milk and curd in their diet. In the traditional houses, cattle sheds are integrated with the houses, where they are fed.

III. CULTURE AND ARCHITECTURE OF HARYANA

Haryana is mainly an agricultural land, laid with very good network of canals and Yamuna being the major river that passes through the state. Women of the family also work alongside men in the fields. After the work is done, the rural menfolk enjoy sitting together and sharing their daily routines over *hukka*, in the verandah of the house. The verandah is also used by women for spreading and drying crops and by children for playing. Besides all the other festivals common to the rest of the country, Haryana also celebrates the harvest festival of *Baisakhi*, *Lohri* and *Teej* with deep religious fervor. Bonfires, singing, dancing and feasting are the integral part of the celebrations. Swings are set up in the open spaces. Various fairs of national and religious importance are also held on the pious land of Haryana since ages. These activities have evolved the necessity of a community space like a courtyard and market squares in their settlement pattern.

The folk art of Haryana encourages the use of redundant or waste things like clothes for creating figures and sculptures of animals, birds and various gods and goddesses of different religions. The pottery found here shows excellent geometrical and natural designs with a wide range of decorative shapes. Paintings of Gods and Goddesses with the help of turmeric powder, *geru*, and charcoal are made on the walls of the houses for puja during various festivals. Wall paintings depicting historical, mythological and social scenes are an important feature of the traditional architecture of Haryana and can be found in almost all the monuments, forts, *havelis*, temples, wells and *chhatris* of the state.



Fig. 7. Swings in the courtyard during ‘Teej’.



Fig. 8. Crafts of Haryana.



Fig. 9. Wall Paintings of Haryana.

IV. VERNACULAR DWELLING OF GURGAON

Gurgaon lies in composite climate region with annual average temperature of 25°C, maximum temperature of 40°C in summers, minimum temperature of 3°C in winters, and average annual rainfall of approximately 714 millimetres.

The *chaukband* house (a house with a central courtyard) of Gurgaon, is equipped to deal with climate like this. In these dwellings, thick brick walls (400-500 mm) with a high-density thermal mass serve as an ideal heat-balancing device; a central courtyard provides and controls daylight and regulates the movement of air inside the house; a roof with a wooden beam structure gives adequate insulation from direct solar radiation; and *pucca* burnt bricks - by virtue of their porous quality - help in balancing humidity during monsoons. Ventilators (*Jaali*), windows and ducts exhaust the hot air.

There is a spatial hierarchy in the house; public space such as verandah and drawing room meant for visitors to rest; semi-private space such as central courtyard meant for cooking, eating and entertaining female guests; and private space such as bedrooms and niches that are used as storage.

The dwelling form also maintains a cordial relationship with the neighbouring dwellings. The projecting ‘*Chajja*’ provides space for guests to move around and have a nice view as well as plays a vital role in building up the character of the street. The *chajja* also acts as a shading device for rooms on first floor.



Fig. 10. Plan and Sectional Elevation of the Vernacular Dwelling.

Flower petals and leaves are carved on the stone pieces for decoration. Wall paintings are drawn with colors, known as ‘*Bheetchitr*’, where ‘*bheet*’ stands for wall and ‘*chitr*’ stands for the colorful painting.

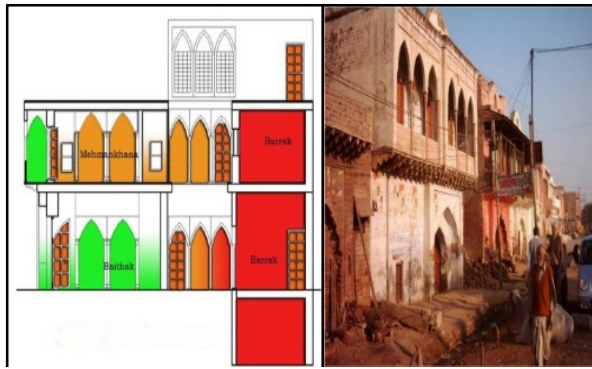


Fig. 11. Projecting 'Chajja' from the House.

V. TRANSITION FROM RURAL TO URBAN

The last twenty years of globalisation has seen Gurgaon turning from a sleepy village of humans, houses and buffaloes, to a city of multinational tower blocks and apartments. Witnessing rapid urbanization, Gurgaon has become a leading financial and industrial hub with the third highest per capita income in India. The city's economic growth story started when the leading Indian automobile manufacturer Maruti Suzuki India Limited established a manufacturing plant in Gurgaon in the 1970s. A large number of people from various social classes have migrated to Gurgaon since then, in search of better lifestyle and job opportunities. Every single migrant, be it the bangla dwellers of *Chakkarpur* or Tamil techies working in an IT company, has created its own micro-environment under the macro-environment of Gurgaon.

Also, the expansion of auto culture (dependence on vehicles) has nurtured a new kind of lifestyle in Gurgaon. The street life in Gurgaon is practically absent. The energy and commerce of traditional cities has been harnessed in a new kind of space - retail malls. Gurgaon is currently home to 43 malls, most built since 2007. Among these is the nation's largest "The Mall of India", with 4.5 million square feet of shopping. The housing type in the city consists largely of multi-dwelling units, including apartments and high rise residential towers. What is striking about Gurgaon's landscape is that apart from few construction sites and half built buildings, there is a 'sameness' in the architectural manifestations all around, depriving human habitats of cultural and regional identity as the same building methods, materials and styles are applied at all these places.

VI. MODERN DWELLING OF GURGAON

Supertech has built a 10 acre residential development called the Araville Township in Sector 79, Gurgaon. The planning of the settlement is done on the basis of

economic status of the user, from two bedroom unit to four bedroom unit. The township is designed with facilities like schools, colleges, sports complex, market places and other amenities. The spaces for their religious and community activities such as clubhouse, gymnasium, party lawns, play area etc. have also been provided but it has a character similar to any other township in the country and the unique cultural identity of the place is missing. There is a monotony in the form of the building with the same old RCC framed structure and the use of modern materials and construction techniques with no concern to the local architecture and the climate of the area.

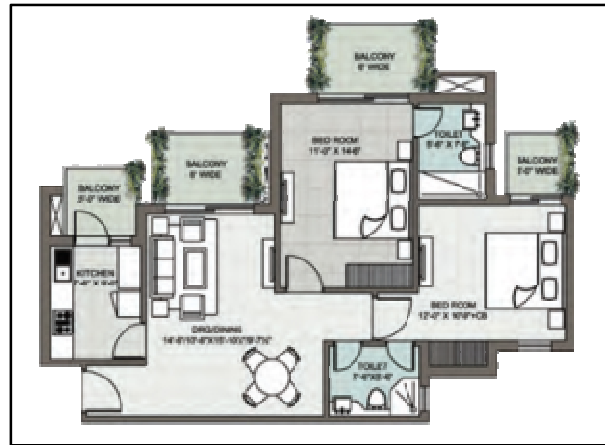


Fig. 11. Unit Plan of a 2 BHK Flat (1295 Sq. Ft.) of Araville Township.

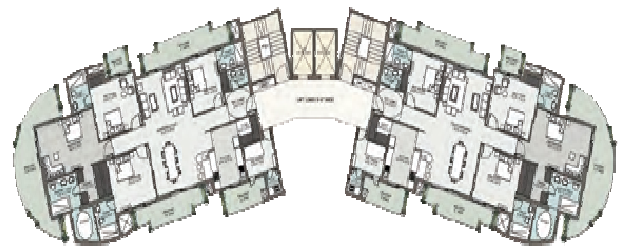


Fig. 12. Cluster Plan.



Fig. 13. Elevation.

VII. MALLS AND OFFICES OF GURGAON

DLF City Centre is the first mall built in Gurgaon (2001) and bears the typical modern façade of a mall in India. It consists of three floors wrapped around a central open space, which, on the ground floor also provides seating for shoppers. Shoppers on the second and third floor are inevitably drawn to the railing, where they stand gazing down, up, and across at their fellow shoppers.



Fig. 14. DLF City Centre, Gurgaon.

DLF ATRIA makes for a powerful architectural gesture, in terms of offices in Gurgaon. The design essentially consists of two parts: a basic rectilinear body with glass curtain walls that houses the office space and a clear glass atrium in the front running through the full

height of the building from which the structure derives its name. A cantilevered pointed pergola supported by tapering column further enhances the dramatic effect of the 6-storey high atrium.



Fig. 15. DLF ATRIA, Gurgaon; **Fig. 16.** Central Open Space in DLF City Centre.

The treatment of the form and the materials used in both these projects are in line with the usual international architectural style that emerged in the 1970s, incorporating elements of high-tech industry and technology into building design, completely ignoring the local architecture and climate of the area. In the words of Charles Correa, “Architects have surrendered more and more to the engineers. Most of the new buildings are the same old glass buildings, regardless of climate. They just change the specification of the glass in hot places.”

VIII. ANALYSIS

Table 1: Parameters of Changes in Culture and Architecture.

PARAMETRES OF CHANGE	DETAILS	VERNACULAR ARCHITECTURE	MODERN ARCHITECTURE
Culture	Characteristics	Folk culture and traditions are well defined.	No reflection of local culture and traditions.
	Aesthetics	Wall paintings, figurines and sculptures are integral part of architecture.	Contemporary art is depicted.
	Planning	Settlement planning as per their lifestyle and work culture.	People live in isolation, less interaction with others, no place for local arts and crafts.
	Community living	Verandah, <i>chowk</i> , courtyard for social interaction. Strong social binding.	Clubs, sports complex are interaction spaces. Social binding is less.
Architecture	Site planning	Planning as per topography and landscape.	Planning is as per the economic status of the user like HIG, MIG, LIG and EWS.
	Response to climate	Plan and built form is climate responsive.	Expensive eco-friendly materials used.
	Materials	Locally available material like stone, mud, bamboo, timber and lime are used.	Imported materials are preferred.
	Stone	It is used in masonry, roof, flooring, in-built furniture and <i>Chajjas</i> .	Used in a better way with modern techniques.

PARAMETRES OF CHANGE	DETAILS	VERNACULAR ARCHITECTURE	MODERN ARCHITECTURE
Architecture	Mud	Rammed earth, adobe, mud mortar used in random rubble masonry, helps in acoustics and heat resistant.	Used in a better way with modern techniques.
	Bamboo	Because of strength and flexibility widely used as structural skeleton and roofing structure.	Used in a better way with modern techniques.
	Timber	Used as a structural component, in the construction of beams, rafter, trusses, doors, windows and furniture.	Used for doors, windows, not as structural member.
	Lime	Used in brick masonry as a binding material and for plastering.	Rarely used.
	Brick and Terracotta	Brick for masonry walls, piers, <i>jaalis</i> , etc. Terracotta for roofing tiles, roof gutters, pottery.	Brick for masonry walls, piers, <i>jaalis</i> , etc. Terracotta for roofing tiles, roof gutters, pottery.
	New materials	Less adaptability.	More adaptability.
	Cost-effective	No transportation cost.	High material and transportation cost.

IX. RESULTS AND FINDINGS

Vernacular dwelling incorporates an acceptable architectural language drawn from various vernacular design aspects, including, architectural forms, styles, traditions, elements, materials and climate at the site. The form of a building is evolved from its functions and the architectural characteristics are defined by their work culture. The planned modern dwelling, on the other hand, is defined by the economic status of the user. The modern material with 'global character' are used which change with new construction methods and techniques, in contrast to the vernacular architecture where the materials as well as the construction style has a unique 'local character'.

Michelle Addington remarks, "Technology is the handmaiden of design and, as such, is meant to be subordinate: design is the why and the what, whereas technology is the how-to." The pro-global design sponsors argue that it promotes invention and dissemination of new technologies and materials in response to changing functional needs and sensibilities. It is an image of progress, prestige and future orientation, but it is also important for the man to be connected to his past for the continuity of man's culture. It preserves our individuality in the society, just as spoken languages and local dialects impart identity.

A significant increase in the urban tourism sector, in the last ten years, provides evidence of the concern for the localisation of a place. The principal demands of urban tourists are for high quality, cultural and 'authentic' places. Henceforth, the sole purpose of the tourism sector will lose its meaning if the homogenizing tendency of the modernism will be allowed to spread any further.

From the American Congress for the New Urbanism (CNU), the council for European Urbanism (CEU) to the Academy of Urbanism at RIBA, each organization in its principle, seeks the creation or redevelopment of their towns, cities and metropolises to respect the historical patterns, precedents and boundaries, keeping in mind the regional identity and the aspirations of citizens. The Ministry of Urban Development (MoUD) in India has also stated that while reliable and adequate utility services will be critical to a 'smart city', the design and creation should be "region-specific and not a generalized concept as practiced earlier".

X. INTEGRATION OF VERNACULAR AND MODERN IN THE CONTEMPORARY DESIGN

Vernacular architecture creates a sustainable built environment. Henceforth, the integration of vernacular and modern in the contemporary design can produce sustainable and more efficient designs. Tahiliani Design headquarters in Sector 37, Gurgaon is one such example where the principles of vernacular traditions have been incorporated in the contemporary design of the building. The project was nominated for the AGA Khan Award for Architecture, 2010.

It is a three storied RCC structure supported on large mushroom columns and flat slabs, allowing beam free spaces with generous height. The column grid is as per the space required by number of tailors and their machines and tables. The mushroom columns also turn into vaulted structure and vaulted terrace garden in places. The arched shape of the structure is inspired by the Islamic monuments of Delhi, reinterpreted into a contemporary design.

The concrete is left exposed inside the building, which adds to the rough character of the industry and also reduces the maintenance cost of the building.



Fig. 17. Main Entrance of Tahiliani Design Headquarters, Gurgaon.



Fig. 18. Front Vault Detail. **Fig. 19.** Front steps detail.

Double stage evaporative cooling system is installed inside to air-cool the production floors. Cavity wall is used for the external facade to ensure good insulation for the building. Also, the generous height in spaces like production hall with high occupancy, helps cool the ambient air with natural exhaust systems. Ample cross ventilation allows comfort even in highly humid seasons. It is a building with heavy thermal mass which is ideal for harsh and varying climate of Gurgaon.

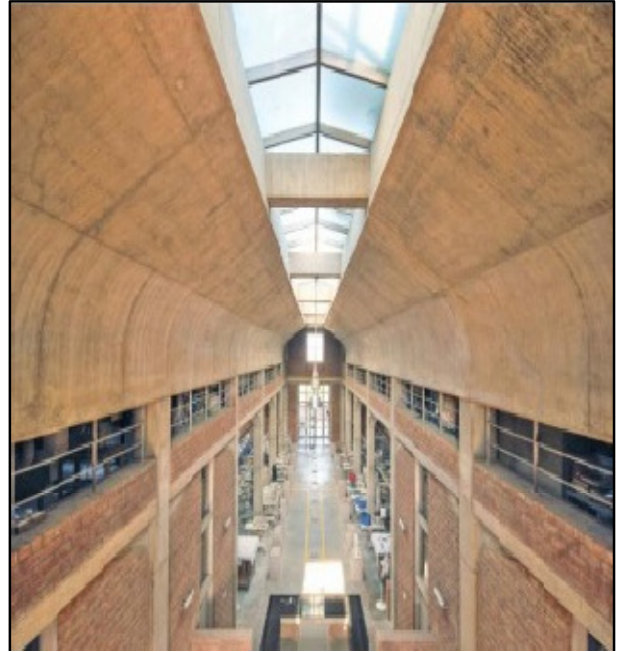


Fig. 20. Production Hall Below the skylight.

XI. CONCLUSION

Globalisation is inevitable and more importantly, the need of the hour for the economic growth of the country. It is the efficient functioning of this engine of the economic growth, that needs attention. Smart City building approaches should be an extension of sustainable planning. An architect must remember that a building is a subset of a city, which in turn is an indicator of a unique civilization. Hence, devising an environment friendly, economically efficient and people friendly architecture where technology is used in monitoring, controlling and governing the infrastructure, rather than creating one, is utmost important today, before it leads to urban decay and gridlock.

The new architectural and urban solutions such as Smart City Mission, Atal Mission for Rejuvenation and Urban Transformation (AMRUT) and Housing for All, that are being shaped in the country today, provides an opportunity to the architects to inspire a new architectural language in the age of globalisation which transforms them from being just huge technical projects into our true identity deeply rooted in our history and heritage. Time to make hay while the sun shines!

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