Study And Impact of Urbanization on Heritage Site: Ajj Sarovar

Prof (Dr) Kanchan[1], Suriya Rajan[2], Kunal Vibhute[3], Krishnendhu[4]

[1]Professor- University Institute of Architecture, Chandigarh University,
[2]Student- Master of Architecture, University Institute of Architecture, Chandigarh University
[3]Student- Master of Architecture, University Institute of Architecture, Chandigarh University
[4]Student- Master of Architecture, University Institute of Architecture, Chandigarh University
[1]arkanchan19@gmail.com [2]rajansuriya63@gmail.com [3]kunalvibhutekv@gmail.com
[4]21mar1011@cuchd.in

Abstract

Heritage sites convey a path of evolution of development in and around its surroundings. The aim to study this local heritage site is to recognize the importance of Maharaja Ajj Sarovar which is most known to local residents but somehow abandoned for the outside world. This particular historical site has religious importance also. The morphology of the site conveys lot of transformation in different eras. The objectives of the paper are to study and analyze consequences of urban makeovers in due time on status of Socio- economic growth, habitat and urban pattern (in form of built environment and infrastructure). Authors found that the heritage site was abandoned for long time and now some developments are being done by consuming the site area which should not be undertaken. It is found after detailed study and surveys that the cultural values of the site are not being maintained as a historical and religious site. The paper suggests the development plan that will bring economic development, environmental enhancement, and more social equality and contribute to sustainability, resilience and quality of life in an urban reform. It is conveyed through the survey and analysis that this haphazard growth around Ajj Sarovar needs attention of both the users and the policy makers to intact the integrity of the site.

Keywords: Heritage Site, Transformation, Urbanisation, Impact

1   INTRODUCTION

1.1   Background

Punjab has experienced rapid urbanization in recent decades leaving less agricultural land and an increase transformed migration of people around. This paper uses census, morphology, government map data from 1991 to 2022 to explain the recent past trends and patterns of urbanization in Kharar which had resulted in abandoning of the Ajj Sarovar site. The town is to be fully-integrated and well-connected with the Heritage City- Chandigarh, cultural and built heritage amidst rapid development and competition to meet the demands of increased population commercially. Most importantly, the urban population of Kharar was found to be denser in the neighbourhoods of Maharaja Ajj Sarovar around the historic lake. The authors studied and analysed the impact of the rural to urban transmission along with development of mixed-use buildings.

Kharar is the second most populated urban settlement in Greater Mohali Area Development Authority (GMADA). The population of the GMADA area in 2001 was 711,210 persons, with 38.9% of the population classified as urban. The urban population of the GMADA area is highly concentrated in the city of Sahibzada Ajit Singh Nagar (44.6%), with the remaining 55.4% spread across nine other towns including Kharar. Kharar had an urban population of 42,289 and 8,118 no of households. It has 15.3% of GMADA Area's Urban Population with 4.9% Population Growth.

A total of 31,296 no of literates (male literates are 17,612 and female literates are 13,684) is the literacy count and Municipal Council plus outgrowth consists of 13,727 workers (Male-11,370, Female-2,357). The entire Kharar local planning authority guidelines are for 3,324ha area besides urban and rural settlements, The town has civic, education, Warehousing, retail/ hotel, resort, small & medium industrial establishments. Migrants of different states of India are residing in the town due to increased commercial and industrial activities.

Fig:1(a)

Fig:1(b)

Ajj Sarovar, the suburban area is a residential and commercial zone. Due to the evolution of institutional buildings in the last 10 years there are many students' population residing in Kharar. It is at a distance of about 10 km from Chandigarh City, 15 km from Chandigarh Airport and about 4 km from Mohali.
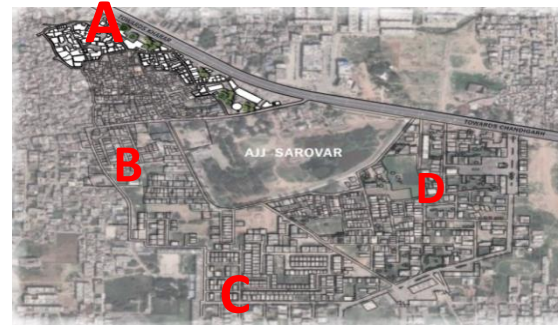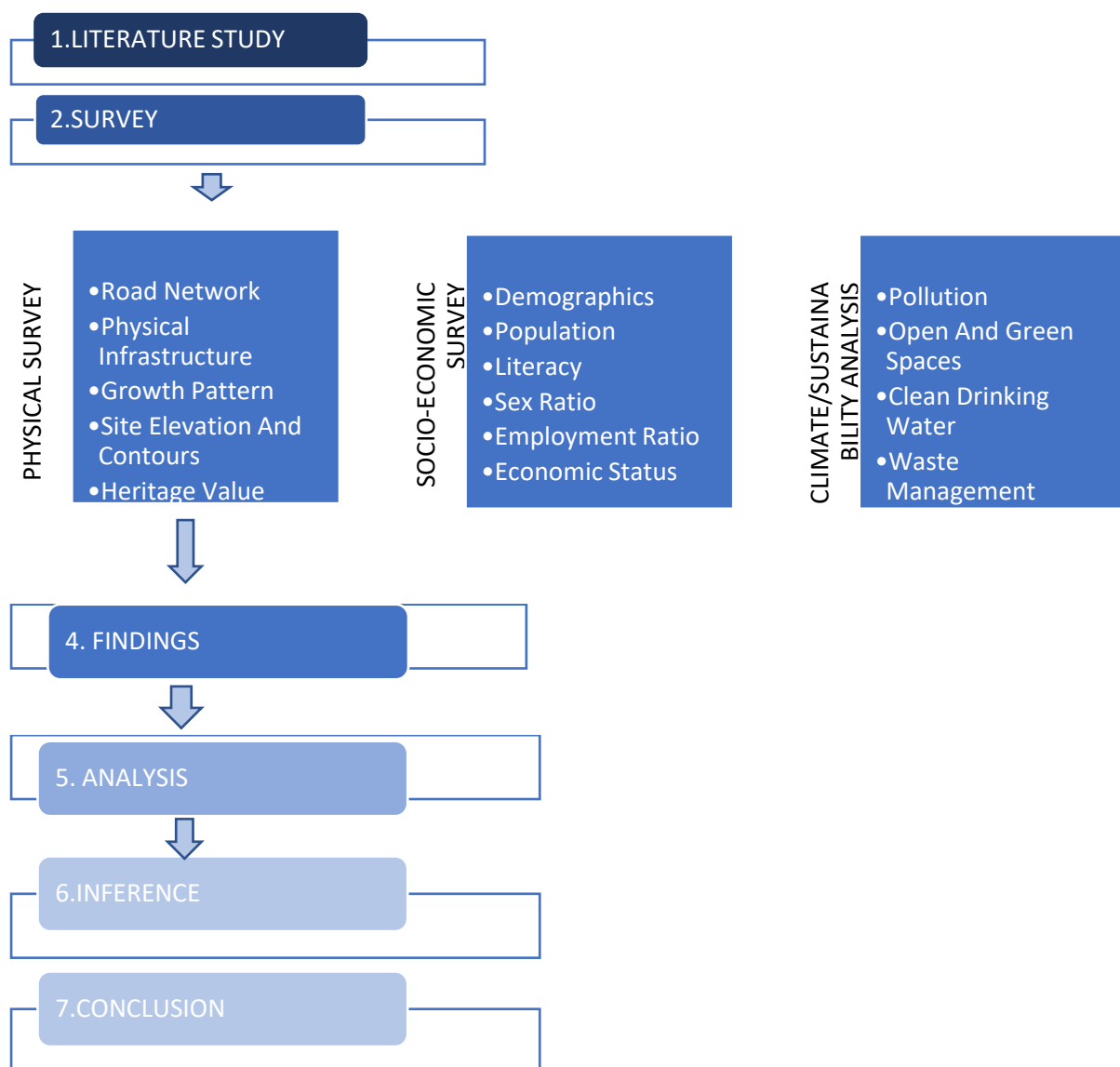
1.2 About Ajj Sarovar:

Maharaja Ajj Sarovar, the study area marked in white colour in the Fig.1(b) is surrounded with a historic temple, the Chinta Haran Temple and Man-made Lake. It is known that this temple and lake were built by Maharaja Ajj, an ancient king of India who was the grandfather of Sri Ram Chandra. The lake has 15 hectares of land set aside along with the lake abandoned as per Fig:1(c).

The region also has issues like traffic and parking problem, broken roads, blocked sewerage, poor drainage, and poor in basic services like sanitation etc. The study is to find out the impact on the people living in the zone around Maharaja Ajj Sarovar in respect to socio-economic status of the locality.

Fig:1(c)

2   METHODLOGY

1.LITERATURE STUDY

2.SURVEY

PHYSICAL SURVEY
- Road Network
- Physical Infrastructure
- Growth Pattern
- Site Elevation And Contours
- Heritage Value

SOCIO-ECONOMIC SURVEY
- Demographics
- Population
- Literacy
- Sex Ratio
- Employment Ratio
- Economic Status

CLIMATE/SUSTAINA BILITY ANALYSIS
- Pollution
- Open And Green Spaces
- Clean Drinking Water
- Waste Management

4. FINDINGS

5. ANALYSIS

6.INFERENCE

7.CONCLUSION

The study is based on primary and secondary database. Primary data includes site survey, preparation of drawings, personal interviews and questionnaire-based survey using linker scale. Secondary data base is taken from government reports and other research executed by students of the same batch. The survey has also recorded the development pattern to understand the fabric of the zone to relate with the morphology and find out in which aspect the zone is getting developed. A sample of around 200 stakeholders was analysed by all. Analysis of the urban pattern is studied in detail for Part A in due consideration of the data collected for parts B, C and D studied by other groups of the class.

2.1 Objectives

- To study and understand the urban fabric and growth pattern.
- To understand the demographics, infrastructural facilities and sustainable neighbourhoods of the region and their requirements.
- To study the various policy measures and programmes initiated by the government.

3 DATA COLLECTION

3.1 Urban Growth Pattern Around Sarovar (Part A)

1966

FORMATION OF CHANDIGARH AS A UNION TERRITORY.

1968

ESTABLISHMENT OF ARYA HIGHER SECONDARY SCHOOL, MAIN BAZAR, KHARAR.

THIS SCHOOL IS THE OLDEST SCHOOL OF THE STUDY AREA. THIS MIGHT HAVE BEEN DEVELOPED DUE TO MORE POPULATION OR AFTER THE CONSTRUCTION OF SCHOOL THE ZONE WOULD HAVE BEEN STARTED TO GROW. (APROX. 800M FROM OUR ZONE)

1975

TOWNSHIP PLAN WAS INITIATED FOR MOHALI AND OFFICIALY NAMED SAHIBZADA AJIT SINGH NAGAR.

MOHALI HAS DEVELOPED RAPIDLY AS AN IT HUB OF THE STATE OF PUNJAB.

1984

MOHALI STARTED DEVELOPING AS AN INDUSTRIAL ESTATE, RESIDENTIAL ALSO STARTED TO DEVELOP DUE TO IT HUB.

DEVELOPERS LIKE ASTHA ENCLAVE , GILLCO VALLEY STARTED TO BUILT THEIR GATED COMMUNITY.

1990

ESTABLISHMENT OF ARYA WOMENS COLLEGE

ARYA HIGHER SECONDARY SCHOOL ALSO CONSTRUCTED AN WOMENS COLLEGE IN THE SAME CAMPUS.

2000

ESTABLISHMENT KHARAR BUS STAND

2006

KHARAR RAILWAY STATION WAS CONSTRUCTED

AMBALA TO LUDHIANA RAILWAY LINE KHARAR MORDEN BUS STAND ALSO HAD A PROPOSAL.MIGRANT WORKERS STARTED TO COME DUE TO INDUSTRIAL ZONES , DUE TO THIS FLOATING POPULATION STARTED TO INCREASE.

2010 - 2013

MANY COLLEGES WHEREOPENED, CHANDIGARH UNIVERSITY , RAYAT UNIVERSITY

DUE TO MANY COLLEGES WHERE ESTABLISHED , STUDENTS POPULATION WAS ALSO GETTING HIGH WITH THE INCREASE IN TRAFFIC CONGESTION.

2016 - 2019

CONSTRUCTION PERIOD OF KHARAR FLYOVER

THE FLYOVER WAS DESIGNED TO REDUCE THE TRAFFIC CONGESTION IN THE NH5 HIGHWAY (KHARAR TO BALONGI)

2020 - 2022

FLYOVER OPENED TO USE AND KHARAR BECAME A STUDENTS HUB AND MANY MIXED USE BUILDING IS ALSO BEING DEVELOPED

Urban growth in organic pattern

Building is oriented along the road structure.

NH-95

Less built-up mass and more open area Denser urban pattern and increased population due to lot of migrants in 2000 and students' population.
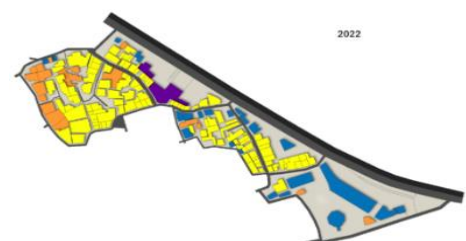
Flyover construction due to prevailing heavy vehicular traffic in 2020

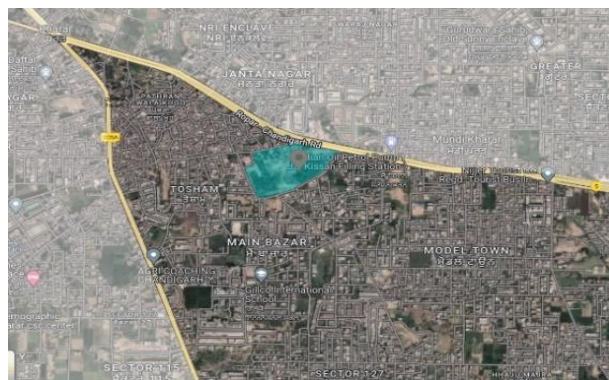Mixed land use started to accommodate all services resulting in less open area

Development of highway was

possible after cutting of the existing trees

Mixed use development started to form in

different precincts
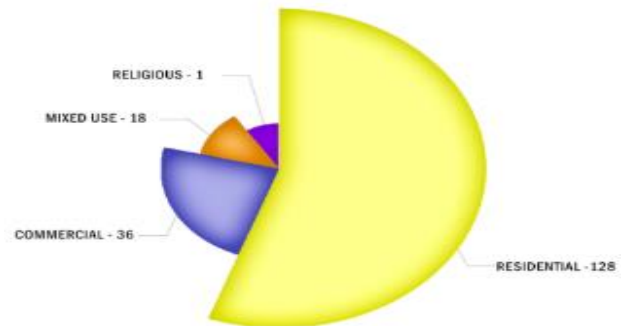
Current 2022 Map Fig 3.1(a)

BUILT AND OPEN SPACES

Fig:3.1 (b)

Existing Built use map Fig 3.1(b) shows that the area is highly denser and divided with 5 precincts. The zone is developed in a linear pattern along the development of the NH95 highway. The fabric of the zone seems to be an organic pattern. There is also a trace that the mixed-use building started to develop, graph given below it is understood that the residential units have started to convert as mixed use buildings Fig:3.1(c)
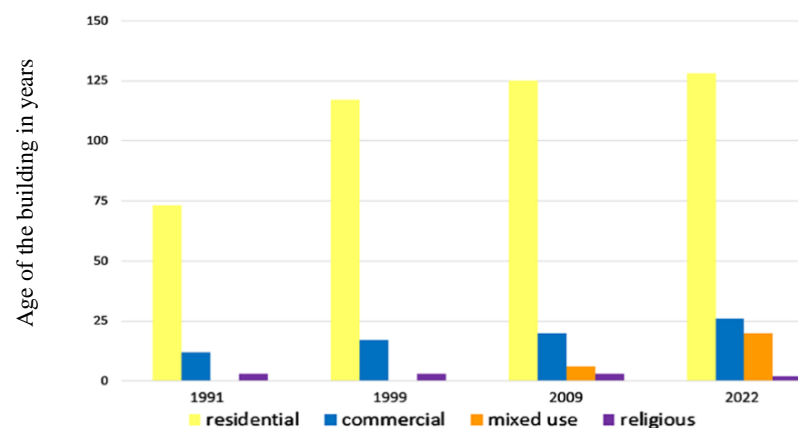

Fig:3.1 (c)

There is one religious building which is a temple. From the graph we can understand that the residential growth is in sudden rise between 1991 – 1999, but after 1999 the growth of residential is very slow because of the land availability and mixed-use buildings are also developing in a gradual graph. The mixed-use buildings started to evolve after 2009 and within 10 years of period we can observe the rise.

Built map shows the density of buildings, dense built spaces with fine grain and coarse grain are uneven.

HEIGHT OF THE BUILDING

From the height of the building we can understand that only 1.26% of the buildings are G+3 in our site area, mostly the height of the buildings is G+2 and Ground floor.
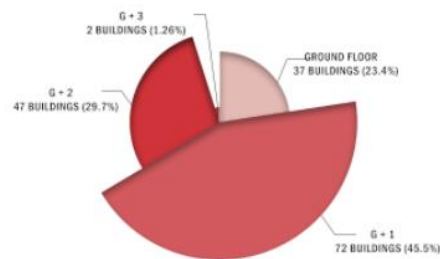
AGE OF THE BUILDING
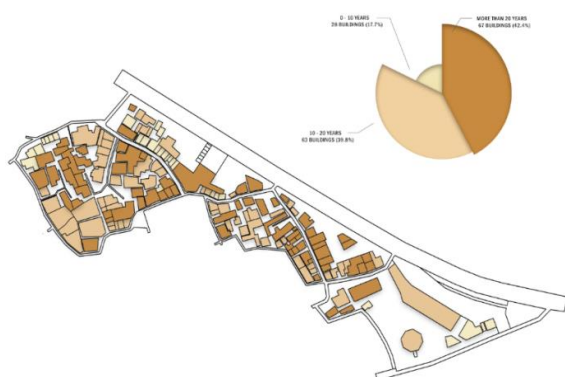
Mostly 42.4% of the buildings are built before 20 years.39.8% of the buildings are 10 - 20 years old and only 17.7% of the buildings are 0 - 10 years old. More than 20 years old buildings are developed in an organic pattern where the following buildings have been built according to the space availability and according to the road network.

DEMOGRAPHICS DATA–SURVEY (53 RESPONSES)

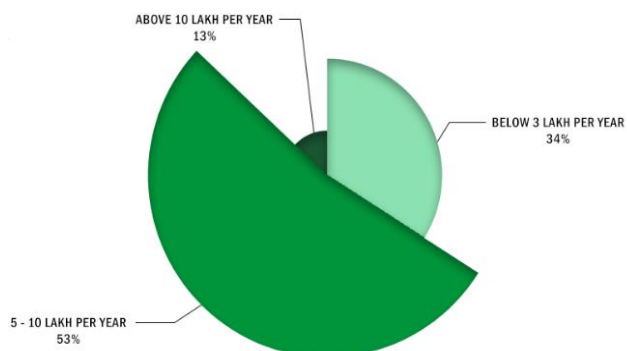### Male - Female Ratio
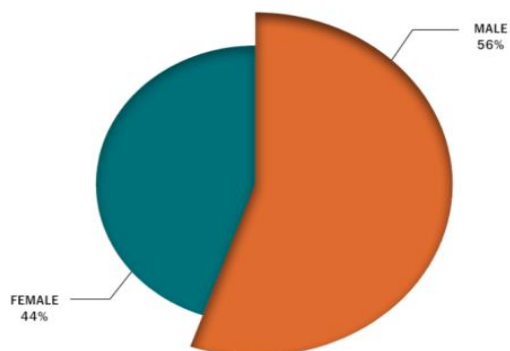
Total population of our area is 4435 according to a 2016 report among these 56% (2484) are male and 44% (1951) are females.
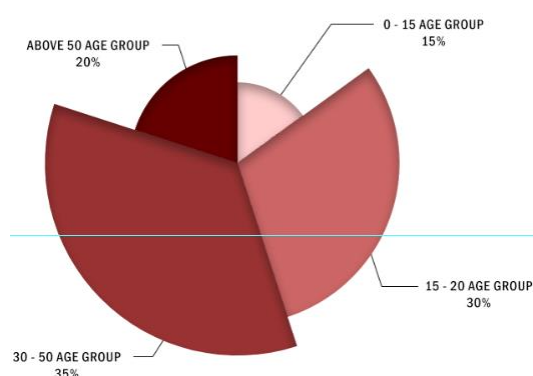
Age Group

Most of the population in area 'A' is of age group between 30 - 35 who are working, followed by the age group   15 – 30 in which most of them are bachelors' students.
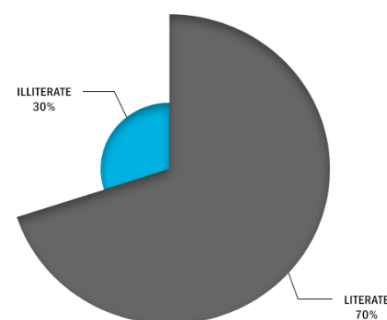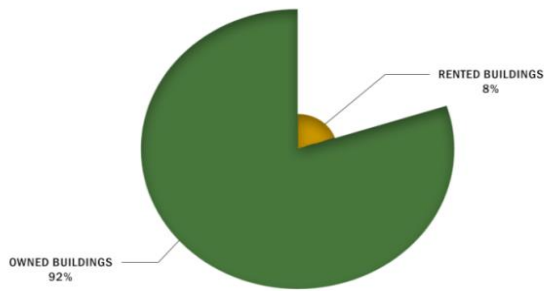
Economic Structure

Area 'A' comprises families earning 5-10 Lakh per year and 34% of the families per year income is less than 3 Lakh.

Literacy Rate

Total number of literate people is 3105 which is about 70% of the total population in our area, and illiterate people are 1330 which is 30%.

3.2 Urban Growth Pattern Around Sarovar (Part B)

In the study area Part B Fig *3.2 (a)* comprises mixed-use development including Residential, Commercial, Healthcare, Institutional, Religious and open green spaces and surface parking zones. The mapping results shown in image have explained the residential area of 1100m², commercial area of 5000m², religious zones 1200m², healthcare facilities of 800m², institutional buildings of 900m², open green spaces are of 6300m², allotted parking spaces of 500m² are the land use areas of Study Area-B research in this area shows that 75% of building function is used as residential zones, 30% commercial, 1% is of religious buildings and about 5% land is given for green and open spaces. The cities are turning into compact cities from urban sprawl to compact city. It is important to note that even though land use patterns have emerged sporadically and the form is organic, they are not even or uniform. As the development of the Study Area-B is the

Ownership Type

Only 8% of the buildings were rented in our site area, Mostly the tenants were college students or the migrants who came here to work.

oldest of its type which comes up with the organic development patterns and its problems.

It can be seen in Part C Fig 3.3 (a) that the town has a combination of both organic and grid iron pattern like settlements in all areas. In the 90's the development was very less, scattered, organic but in linear form which was mostly along the main NH-21. In the 20's, a rise in developments can be seen in the above images. Settlements during these periods are gridiron like settlements expanding outwardly from the linear axis i.e., the National Highway. Development continues in infrastructure corridors, largely along with transport networks. Older residential areas and development is mixed with cluster housing, while new development is in the form of real estate. Around 6.41 sq. km of agricultural land was lost to the local planning authority in 2000, even after the city envisioned it to be agro-based. Real estate projects in the area are booming, with the development authority giving permission to townships of a minimum area of 10-15 acres for the purpose of development.

PART B   Fig 3.2 (a)
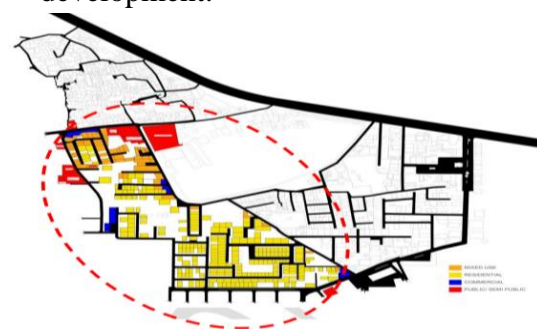
PART C Fig 3.3 (a)

3.3 Urban Growth Pattern Around Sarovar (Part C)

This may mean future development will be more extensive in nature. Considering the wide variety of goods, food and high fertility of soil provided by peri-urban farms, it is highly deplorable especially in the current situation to promote such development. A similar scenario may be seen for other towns around Chandigarh, even though most of them have no vision to promote agriculture, but instead want industrial investment.
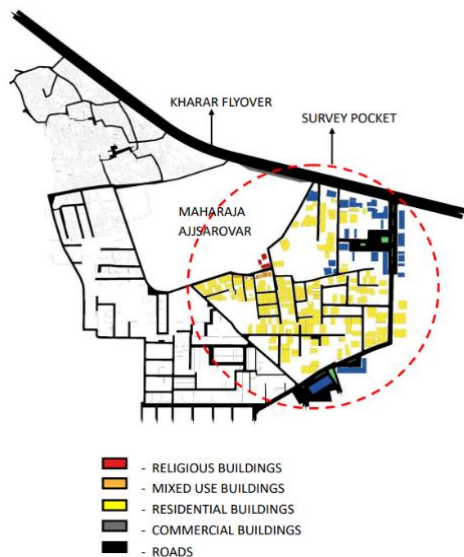
3.4 Urban Growth Pattern Around Sarovar (Part D)

In study area Part D Fig *3.4(a),* it is found that 67% of area is occupied with native population. In professional profile 53% male and 16% female are working population, 62% of workers work in less than 1km area, 23% work in 1-2 km of area and 15% work at a distance of more than 2km. Maximum households use their own mode of transportation for work where 42% use 2-wheelers for the movement, 31% use 4-wheelers, 17% use public transportation and 10% work in their walk able area. Part D holds an area of 37 Acre of land out of which 78% of residential area, 20% of commercial area,1 % of religious, 1% mixed use and 10% is the open area. Survey finds that maximum women are not working though they are well educated. Survey found that the reasons for non-working status of women are either faraway places (31% women responses) or non-qualified (26% women responses). Further, 51% women admitted to prefer work if they got the opportunity nearby in the area.

4 ANALYSIS

4.1 Hierarchy of Roads

The National Highway 95 and Arya college road was mostly used as primary roads. Arya college road also connects to Landran road Fig 3.1(a). There were three secondary roads which were the Kaushal hospital street, Janta Nagar street and upper bazaar street. The upper bazaar street connects to the main bazaar of Kharar the dominating road network was the tertiary road network due to high

PART D Fig 3.4(a)

dense population, many undefined paths were also there. Fig 4(a) and Fig:4(a)

4.2 Road Classification

There are only three junction points along the arterial road connection and collector road, compared to collector road and local road connection the arterial road has less junctions Fig:*4.2(a)*. The arterial road is extended but also there are issues of traffic congestion due to on road parking and high PCU count in the morning and evening time, traffic is also in the junction which connects to Landran Road Fig:3.1(a).

There is one arterial road which is the main highway (NH 95) connected linearly to the study zone Fig 4.2(a). There are many junction points and cul-de-sac because the roads are interconnecting and it's a highly dense area. Fig 4(a),4.2(a).

Fig:4.2 (a)

4.3 Traffic

There were accidental spots because of haphazard intersection points in the organically developed layout. In the Janta chowk street and NH 95 intersection the down towards Janta chowk street has a level down difference, which is the blind spot for the vehicle approaching towards NH95. In this concentrated area, traffic volume count was measured according to the class of vehicles.

From the PCU count analysis it is understood that, due to the vehicles using the Arya college road to go to Landran road which is a shortcut but also due to high density of car and auto in the evening and morning the place gets traffic. Fig:4(a) and 4.3(b). The Janta chowk street and NH 95 is a four-road junction and a "U" turn spot
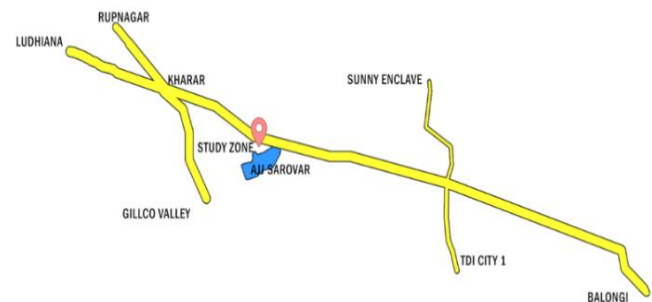
Fig:4.3 (a)

for the vehicles, under the flyover, Mainly the traffic congestion is between 8am - 9:30am and 5pm-6:30 pm Fig:4(a) and 4.3 (b). From built use study we can understand that the zone is more developed towards mixed use structures in the future. Fig 4.3(c).
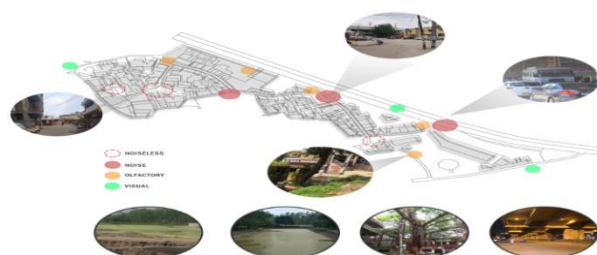
Type of Vehicle	Balongi to Kharar			
	Two wheeler / Cycle	Auto Rickshaw/Goods Auto	Car/Taxi/Pick Up	Private Bus/Government Bus/ Truck
1st reading	20	4.5	41	21
2nd reading	15	13.5	45	18
3rd reading	21	6	38	27
4th reading	25.5	9	39	24
5th reading	16.5	6.75	35	18
6th reading	18	6	42	21
7th reading	20	9.75	34	21
8th reading	16	6	31	24
9th reading	21	7.5	44	18
10th reading	20.5	8.25	35	30
11th reading	19	5.25	38	21
12th reading	20	9	40	24
13th reading	17.5	6	31	18
14th reading	18.5	7	44	21
15th reading	21	9	30	24

Fig:4.3 (b)

Fig:4.3 (c)

4.4 Built up Area/ Open Area

RESIDENTIAL ZONE

COMMERCIAL ZONE

ON ROAD CAR PARKING

ON ROAD CAR PARKING

CREATING BOTTLE NECK

CREATING TRAFFIC ALONG HIGHWAY

Street activities clearly indicate that there are a lot of unplanned activities which are creating chaos. Unplanned continuous urban fabrics in the town are eating up the open areas. Many childhood activities are not being undertaken which are essential for regular growth of a child. Lacking in recreational activities and social interactions, youth of the town are getting involved in different types of addictions.

5 INFERENCES AND SUGGESTION

Ajj Sarovar, an ancient heritage site with a temple and manmade lake is surrounded by an urban fabric that is transforming at an exponential rate day by day. The congestion and unplanned development are creating a lot of issues due to migration leading to urban sprawl. The connectivity among different amenities is needed to be well connected through different traffic movement strategies to avoid bottlenecks at roads and accident-prone areas. Mixed land use and commercial business can be promoted on high scale by providing designated parking lots and planned road networks as most of the stretch is well connected with the

highway passing through the town. Open/ Recreational space demand may increase tourism to the town as an extension of the city- Chandigarh. Socio-Economic growth of the town can be achieved by upliftment of the women in the area, basic neighbourhood amenities and services along with mixed land use and cultural values. The uneven distribution in urban fabric is deteriorating the importance of social and cultural values of the Sarovar leaving it abandoned. The integrity of this ancient site is being shadowed down and may result in extinction of the site in near future. A complete revitalization of the Ajj Sarovar is needed of the hour to earmark its importance and survival.

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