



S A N D H I

SANDHI: CREATIVE INNOVATION HUB REPORT

‘A creative economic regeneration & urban design revival project:
Boipara, College Street, Kolkata’ - RAK

‘A creative economic & urban design based pilot project of Kumartuli area,
Kolkata, West Bengal (in association with Kolkata museum of modern arts)’ – CKI

Under
SRIC, SandHI, IIT Kharagpur

This documentation has been done for the description of the surveys undertaken, from 13.07.2015 to 18.07.2015, IIT Kharagpur for the research projects of SandHI, Architecture and Regional Planning, under SRIC, funded by MHRD, Govt. of India.



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IIT Kharagpur



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Foreword

The present report is based on the SandHI Surveys undertaken for the research projects of Boipara, College Street and Kumartuli pocket of Kolkata, West Bengal. The surveys have been conducted throughout the whole study area inclusive of the streets, footpath, built-ups, dilapidated structures, institutions, residential and working areas. The main aim for these surveys was to better understand relationships between the potentialities and gap areas of the innovation as well as the functional features of the two knowledge based micro-zones i.e., the intellectual hub of College Street, Boipara zone and the creative economy based activities of the Kumartuli area.

The report examines the importance of these 2 micro-zones and their opportunities to bring forth the added value to the educational and innovation hubs with creative-economy based augmentation of economic and physical environment as well as heritage and culture through area's tangible and intangible elements. The physical, cultural and economic assets of the space offer motivating opportunities to produce a site specific dynamic innovation with the quality of living, functional activity, aesthetic value of the land. The innovation may also include economic regeneration, provision of urban design and infrastructure, and safety and security of the people in these selected micro zones.

A comprehensive report covering the two Zones for the projects 'RAK - A creative economic regeneration & urban design revival project: Boipara, College Street, Kolkata' and CKI - 'A creative economic & urban design based pilot project of Kumartuli area, has been executed by the team of SandHI Research Scholars and Research Assistants; and accompanying survey assistants from various art colleges and Institutes. The report has initiated a basis of further detailed surveys and analyses that are expected to be completed in the coming months.

Joy Sen
Principal Investigator
SandHI
IIT Kharagpur
September 2015

Acknowledgements

The SandHI Survey Report 2015 is the result of an initiative put forward by the SandHI project (Science & Heritage Initiative). This project is guided by Prof. Joy Sen, Principal Investigator, SandHI, Professor, Department of Architecture and Regional Planning, Head, Ranbir and Chitra Gupta School of Infrastructure Design and Management; Indian Institute of Technology, Kharagpur, West Bengal.

From team SandHI, our special thanks go to Prof. Partha Pratim Chakraborty, Director, Indian Institute of Technology, Kharagpur.

Team SandHI acknowledges all the workers, shop-keepers, residents and commuters of both the surveyed micro-zones, especially who shared their experiences with the team and gave an opportunity to peep in to the essence of these places. Lastly our sincere gratitude to all the persons who directly or indirectly contributed to the accomplishment of the survey and documentation of the research project.

Survey profile

The survey under SandHI project was initiated with the concept of interpreting the traditional facts in the modern aspects and correlating the scattered information in a synchronized manner. The exploration started on 13th of July 2015 with a team of students; a mix of students from various Arts College, MS students and Research Scholars; under the guidance of principal Investigator (SandHI) Prof. Joy Sen. The areas which were selected for study under this research were compiled under **Report -SandHI Survey 2015**. Comprehensive survey Report-A creative economic regeneration & urban design revival project: Boipara, College Street, Kolkata' and 'A creative economic & urban design based pilot project of Kumartuli area, Kolkata (in association with Kolkata Museum of Modern Arts)'.

A reconnaissance survey was conducted between 13th and 18th of July 2015. The SandHI team along with other students were divided into sub groups; each lead by one team-leader. The group had a mix of students from post graduate students to undergraduates. As the team reached the selected spot of the study area, all the groups headed to their given part of the study area to observe and survey. The main objective of the whole exercise was to identify the significance and potentials of selected pockets and their significant parameters which can be used for the further research. This would be followed by a set of analysis with the help of various analytical tools and techniques in future studies of research. Initial analysis part of the compiled data is shown in the given report.

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Team details

The team organization for conducting the survey and preparation of this report was formed with the support of Principal Investigator (PI) of projects, Research Scholars, Master of Science Students from Humanities and Social Science Dept., Research Assistants for technical support, and students from various Art Colleges for survey. The whole team was organized in small groups in order to conduct the reconnaissance survey. The team's composition includes members for photography, note-taking, mapping, and surveying the questionnaires along with one team leader. The survey was conducted by dividing days for Boipara, College Street site and Kumartuli site by assigning two days each for the study area.

The teams were divided in the area so as to cover the whole area. Observations were made by exploring the area with respect to the lanes, streets, junctions, nodes and landmarks of the selected pocket. The main aim of the group division was to get a homogeneous spread and overall image as well as information on the area.

Later with the data collected and observations made, the preparation and drafting of report for the survey was initiated. Consequently the documentation for the report through sorting of data, interpretation, analysis, and mapping was completed.

“Innovation is the specific instrument of entrepreneurship...the act that endows resources with a new capacity to create wealth.”

— Peter F. Drucker

Background

Today, more and more people are living in the metropolitan area. The expansion is in both ways – inwards as well as outwards. The movement of people, in need of opportunities and facilities, is from outer periphery to the main core and as a result the pressure inside the core is causing the opposite effect too. The cultural and traditional activities influenced by rapid globalization has its positive as well as negative impacts over it. In most of the cases it is observed that cities strengthen through their diverse cultures, broad networks and innovation styles of community and governance. Moreover the innovation and creative hubs can come up as a potential aspect for the support of economic activities of the whole city as well as the region. The present report aims to realize the potential.

Based on the variety of people, place and environment; culture, activities and their resources also vary, which gives an identity to the community. Due to rising population, level of urbanization with limited resources has resulted in immense pressure on the urban infrastructure and economy, which has further lowered the quality of life. In this regard, urban regeneration helps to tackle the issue by guiding the improvements and reforms in economy, physical infrastructure, housing supply, and environmental protection. The economic along with the social value of culture and creative activities has great impact on the development of community and can fuel the process of urban regeneration.

Hence, there is a need to re-look into the morphology of the city structure and identify significant pockets (due to city exhaustion over time) not only in inner pockets of the city but also in outer periphery which can lead to economic regeneration based on many avenues of which has character of being an innovation hub or zone and Creative Economy.

Innovation Hub

The term innovation hubs can be understood as any work space or communities or center for research which provide subject specific expertise on the knowledge and innovation, technology trend expertise, and industry specific visions. To understand the innovation level and background, the functional aspect and system of any area has to be researched. With the support of these hubs dynamic flow of knowledge between the business experts and the researchers along with the industrial, government, academic experts, is possible in order to deal with the issues of economies, migration, creativity, diversity, sustainability, education, and urban planning.

Creative Economy

Each place has its potential. It may be physical — a geographical position, or a group of buildings whose historic uses are etched into local memory — or intangible, like traditions and stories, or the skills of its inhabitants.

The Economic Importance of the Arts in Britain (1988), which presented the arts as employer of 500,000 people and the fourth biggest invisible export earner. The knowledge needed for the research undertaken (initial stage) will be in context of:

1. The creative economy, urban space and their relationship
2. Relation with urban regeneration
3. Policies, theories, strategies implemented or adopted worldwide for the urban regeneration in the context of cultural, creative economy, and urban spaces

The creativity present in it gives a way forward to become the area with those potential into an innovation center. It serves the community as well as the individuals engaged in it socially and economically. Although the support needed from government side is not sufficient to make a friendly environment for growing the creativity into an innovation and regeneration driver for the city.

Communion (2011) argues that:

- Much of focus on the investment of cities is in specific regeneration projects or flagship developments
- Lacks addressing the nature of the infrastructure, networks and agents engaging in the city's cultural development

Further, Communion (2011) states that the focus of economic strategies and policy has been on what a city should have in order to be or to become 'creative'. These policies are often replicated without taking into consideration the distinctive aspects of places and circumstances. Later, his paper, forwards an understanding of the connection between the urban space and the systems of local cultural production and consumption. Short-term users (visitors) and long-term users (local community) in the city have different impacts on the economy. Successful urban regeneration projects are those implying a strong involvement with the pre-existing community and their local identity and the incoming visitors as new users.



Boipara- College Street

Profile of the Study Area

Boipara - College Street

With a history of a vibrant cultural city, Kolkata's existing resources and competitive advantages provided the perfect setting for the advent of creative and cultural economy. Kolkata is known for its architecture, literature, culture, creativity and arts. Due to prime location of various educational centers and disseminating knowledge innovation, it has attracted creative economy since its development from colonial period. Coalescence of intellectual demand and education sector created way for the book market in College Street zone resulting in the creative economy generation for the city. Preserving the culture of reading in this digital age has emerged as important for the sustainable growth of living culture. Moreover, the transition and urban renewal must be guided such a way that it makes space for the economic and cultural survival of the creative activities generating income and employment to the city. However, the competition along with technological advancement in the market is also changing as new and prominent Global business/firms are entering into the local/regional industry of book market in that area and causing threat to local economy.

The book loving communities have different tastes, modes of communication and perceptions that somehow directly or indirectly determine or affect the correlation of the zonal classification or categorization of book shop and depend upon visual elements based cultural parameters. The foundation of Boipara is based on knowledge innovation. Boipara's environment has been gradually escalating by a rhythmic economic system through its visually organized as well as unorganized elements and running audience. So long, the scenario of Boipara is 'what it was' but now talk about 'what it is' in the next paragraph.

Boipara - (Boi:book, para: neighborhood) also College para. It is comprised of a 1.5 -1.6 km long street stretch or block in central Kolkata. It has a narrow stretch of road network between Bowbazar and Mahatma Gandhi Road, leads to Hatibagan and Shyambazar further north.

Figure 1: Area profile of Boipara, College Street, Kolkata

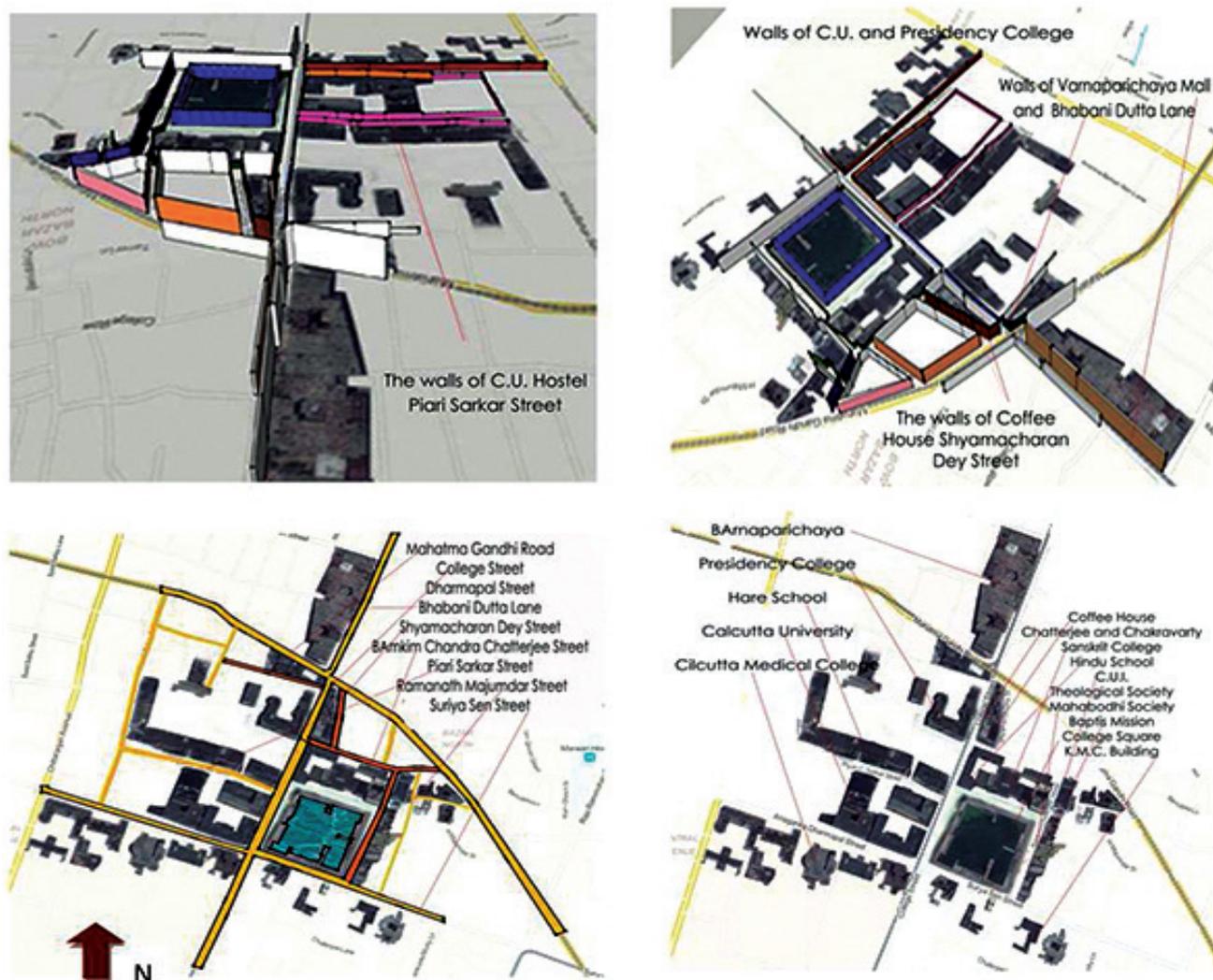


Figure. 1 shows the area profile of Boipara zone. Many historical buildings developed in this process, which includes: Presidency College, Hare School, University of Calcutta, Central Library, which are the oldest educational institutions in the area. W. B. State Archive (in Bhabani Dutta Lane), Calcutta Medical College besides the College Street, Albert Hall, which has been transformed to coffee house, Sanskrit College, Seth Surajmal Girls College, Calcutta University Institute, Hindu School, Jahan Khan Mosque, Theological Society, Baptist Mission, Mahabodhi Society. Both side of Bankim Chatterjee Street, Presidency Boarding House, Makham Kutir in Ramanath Majumdar Street and many renowned food shops are present in Bankim Chatterjee Street and Suriya Sen Street, so are Paramount, Putiram, Mouchak, food corner and many more.

Innovation and Creative Features of Boipara

Generally, the economy of an area or region is influenced by the nature and characteristics of the demography and the natural environment. The natural, human, and capital resources drive the economic activities of a place. Boipara’s economy is driven by the intellectual and educational innovations of the demography and its location. The area comprises key educational sectors and business centers along with various creative support infrastructure. Due to the prime location of various educational centers for disseminating the knowledge, it has generated scope for various creative economies since its development from the colonial period. The book markets may exist anywhere in the city but what makes this unique is the complimentary educational hub with it. The age long presence of the Institutions kept supplying endless demand for the books in the market taking it to the position of largest second-hand book market in the world and largest book market in India.

It is the largest second-hand book market in the world and largest book market in India and collectively boasts of a collection of almost any title ever sold at Kolkata. One can buy rare books at throw-away prices and extensive bargaining take place. This micro-zone clearly describes that the innovation of this culture and economy is based on knowledge and education. Hence further research is required to quantify these innovation potentials of the area.

Figure. 2 shows the areas categorized for the study under certain units described in table. 1, which gives a perception about the micro-zone taken for the reconnaissance survey.

Figure 2: Boipara Zone showing the categorized units for observation



Table 1: Description of the units observed during the survey in Boipara, College Street, Kolkata

	Unit-I	Unit-II	Unit-II
Heritage	C.U., Presidency College, Hare School, Hindu Hostel, W.B.S.A., Guidance Guild, I.I.W.B.M girls Hostel, Student Hostel, CMC etc.	Albert Hall; which has been transform to coffee house, Sanskrit College, Seth Surajmal Girls College, Calcutta University Institute, Hindu School, Jahan Khan Mosque, Theological Society, Baptist Mission, Mahabodhi Society, Presidency Boarding House, MakhamKutir.	Old market/ Barna porichaya, old residential complex, Vidyasagar Tower, Patrabharati building etc.
Book Shops	Authorized and un-authorized old book shops beside the streets	Publishing House, authorized book shops,	Katha-o-Kahini, Chhaya Prokashani, Patiram, Chalantika, Nirmal Boook agency, Patrabharati Publishing House and other
Street and Lanes	College Street, Piari Sarkar Street, Bhabanin Dutta Lane, Dharma pal Street and Nilmadhab Sen Lane.	Bankim Chatterjee Street, Suriya Sen Street, Shyamacharan Dey Street, College Street, Ramanath Majumdar Street, Mahatma Gandhi Road	Mahatma Gandhi Road, Bidhan Sarani, Tamer Lane, College Row, Nabin Kundu Lane and other.
Food Stalls	Informal food stall on street	Paramount, Putiram, Food Corner, Mouchak, Regent, Jugals and informal food stall corner of the C.U.I.	Temporary food stall in College Row
Space for Hoarding and posters	The corner of Mahatma Gandhi Crossing and front of shops	Front and back of the Statue of Kesta Das Pal in corner of Mahatma Gandhi Crossing, upper portion of book stall, every crossing corner of the area.	The building of Adi Mohini Mohan Kanjilal wall and the corner of the four point crossing
Greenery	Play Ground of Presidency college and Hare School	Alongside the interior walls of College Square	Green space in informal settlement
Art	Statue of Rabindra Nath Tagore and David Hare, graffiti	Devid Hare's Tomb, Vivekanada, Bidyasagar, Suriya Sen, Achariya Profulla Chandra statue and half bust sculpture, mural, Jamini Roy's oil painting	Critical Ornamentation of old residential buildings
Other materials	Only books	Books and paper oriented materials, sport materials, card.	Garments, and divers materials

To establish the visual perception of the selected micro-zone Boipara and mentioned observations on the existing entities of the areas are represented below in Fig. 3.

Figure 3: Images showing the profile of Boipara market, Kolkata



A typical row of book shops in Boipara book market.



A typical unorganized Boipara book stall with collection of second hand books



Open street book shops on the footpaths of Boipara market.



A proper built up structure book shop of Boipara market.



The famous age old gathering place –Coffee House



Famous eateries in the area.



Publishers and booksellers in the area



The under-construction structure of Barno parichay mall at the MG Road and College Street junction



Encroached footpaths by the book stalls dominant throughout the market



Temporary structure made for short events on the road blocking the entrance of College Square



Different modes of transport in the area



From Tram lines to rickshaw available in the area





Kumartuli

Kumartuli Area Profile:

The history of Kumartuli dates back to the 17th century when potters in search of better livelihood came from Krishnagar to Gobindapore, a prosperous village on the banks of the Bhagirathi (now river Hooghly) to make a living by making pots, clay toys and cooking utensils for household use. Later, when the land at Gobindapore was required by the British East India Company to build Fort William, the inhabitants migrated further up the river to Sutanuti. The potters moved on to the new destination, colonized a vast area and named it Kumartuli.

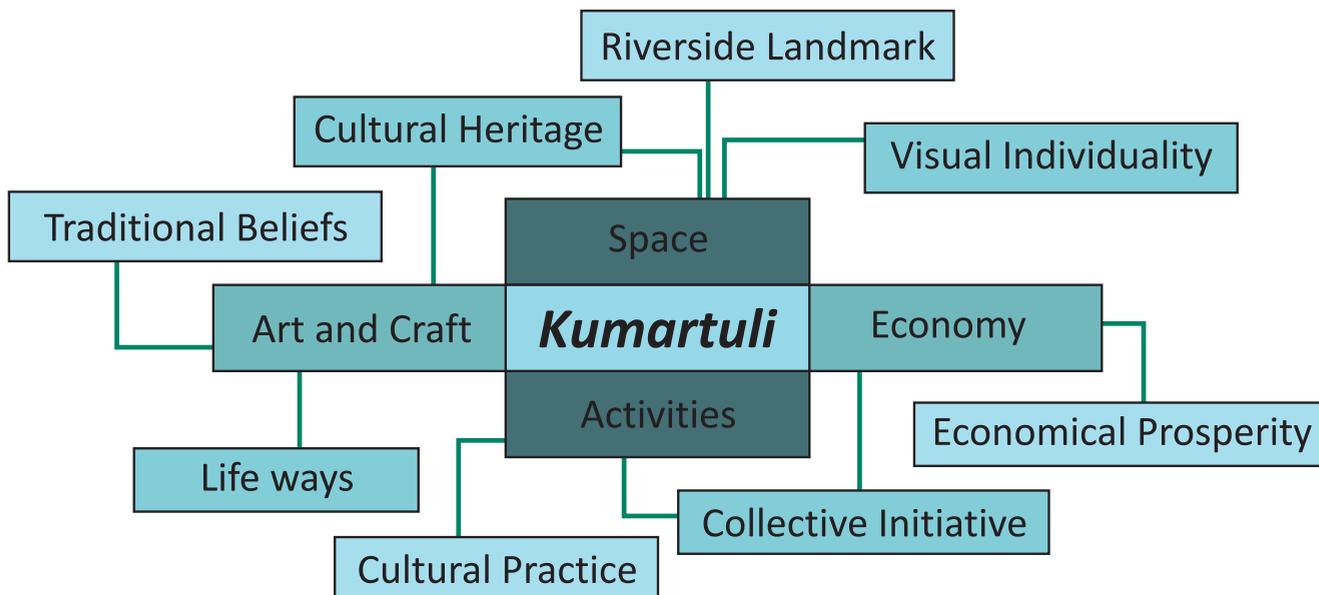
Art and craft is an integral component of the history of civilization and global individuality of every community. So it enhances our socio-cultural aspects to effects on way of life style. Therefore, it has nourished our aesthetic sense, changing quality of life; which generates more creators and innovators, as well as environmental and economic opportunities.

Through time people use indigenous tool and technique which belong with their traditional and artistic discipline. In respect of art and craft community (handicraft) sector has collective initiative to design our historical evolution, introduce aesthetic sense, to create visual and mental communication and finally heritage prosperity. In the large level of handicraft tradition has sustain generations, created job opportunity, increased economic prosperity, and exploitation of intellectual property of cultural phenomenon. Finally, as craft industries is a shining example of using local resources, technology and collective initiative to global area.

With the above background, the historic cultural craft corridor of Kumartuli stands as an important landmark of the city of Kolkata along the eastern bank of Hooghly River. This area has, over the past 300 years or so become a live cultural hub, traditional artist community, attractive to tourists and residents alike. It was formed by a group of potters who came to the area in search of a better livelihood and economic prosperity. They set up their home (patronized by local Zamindar) and created Mrittika-pratima or clay idol of Durga (Mrinmaya) idol and others ancillary artifacts from locally available clay (silt depositions) of the river Ganga. Today, the potters of Kumartuli not only supply clay idols of Durga and other deities all around the State and the country, but also export them abroad.

Accordingly, surveys were conducted based on aspects as depicted in Fig 4

Figure 4: Major aspects for the survey of Kumartuli Pocket, Kolkata



Location of the Study Area:

The study area Kumartuli is located in the North of Kolkata in West Bengal, India. It comes under Ward No. 9 of Kolkata Municipal Corporation (KMC). This neighbourhood is located in between Rabindra Sarani (formerly known as Chitpur Road) and the eastern bank of Hooghly River, between Ahiritola and Shobhabazar. In this craft region mainly craft community and the heritage structures juxtaposed Abhay Mitra Street, Bonomali Sarkar Street, Durga Charan Banerjee Street, Rabindra Sarani. Furthermore, starting from collection of raw materials for the artifact (Durga Idol) to the transportation of artifact is carried out through the ghats present along the zone such as Chapatola ghat, Raj Ghat, and specially Kumartuli Ghat along eastern bank of River Hooghly as well as road transportation.

The land use map of Kumartuli area is shown in fig. 5, which forwards the detail of micro-zone with its activities and character of existing land-use. The legend shows the different land uses in and adjacent parts of the area.

Figure 5: Existing land use map of Kumartuli and its adjacent areas, Kolkata (Primary Survey 2015)



The land use map is generated based on the reconnaissance survey performed. The map shows the predominant land use and activities of the area which gives it a particular identity and character. As it is shown in the map, the adjacent pockets of Kumartuli area are mostly residential, the area shown in blue and violet are the spaces where the clay idol making innovations and creative activities exists. The mix use clearly depicts that a single space is used for the studio (making of crafts, idols, etc.), storing, as well as selling the finished products.

Visual perception of the selected micro-zone Kumartuli and started observations on the existing entities of the areas are presented below in Fig. 6.

Figure 6: Image showing the profile of Kumartuli, Kolkata



A typical street of potter's colony in Kumartuli.



Example showing studio space and storage in a single unit of Kumartuli.



Open street utilized for keeping the raw materials like mud, woods, straws.



Encroached streets for storing raw materials due to lack of storage space.



Congestion on the streets due to encroachment



Ghats used for the collection and transportation of raw materials to Kumartuli



Condition of the structures in Kumartuli.



Condition of old traditional structures of Kumartuli.



Idol-maker working in daylight.



Workers from different region of Bengal and Bihar migrate to Kumartuli for job during idol making season.



Various creative work prevailing in the area



Ancillary crafts and ornamentals work



Surveys



Survey Analysis

Survey Details

To understand the functional indicators of the pockets following three indicators have been framed through literature review done till date, for the Reconnaissance survey.

1. Physical indicator
2. Functional indicator
3. Heritage & cultural indicator

Among these aspects, the physical indicator will determine the availability and presence of existing infrastructure of the study area. This indicator is categorized based on transportation and infrastructure facilities. This data will form a source for baseline study of research. The following are points under each category:

Transportation base:

- Availability of Motorable pucca/ Motorable kutcha/ Non-motorable pucca/ Non-motorable kutcha road
- Availability of footpaths
- Accessibility of the streets (side lanes/ alley)
- Maintenance & Cleanliness of the streets
- Availability of taxi/autos/vans/rickshaw (Para-transit)
- Availability of water transportation facilities (ferries/jetties)
- Availability of Parking facilities
- Availability of street lights

Infrastructure base:

- Availability of power & water supply
- Availability of retail shopping (small scale)
- Condition of fixed structure/ temporary structure
- Availability of store house/ware house/godowns for raw/finished materials
- Other organizations (NGO/CBO/associations/clubs/others)

The second aspect will form the base of functional indicator, further which is categorized based on employment, technology, network, and creative/innovation. This section is forming the crucial part of the survey as it is responsible for the analysis of area's characteristic and functional structure. The following are points under each category:

Employment base:

- Availability of job throughout the year
- Availability of alternate job
- Economic condition of owner
- Presence of medium/large scale industries
- Presence of small scale/cottage industries
- Any existing Govt. scheme/support to owners

Creative /innovation base:

- Presence of creative industries (cottage/creative)
- Presence of local performing arts/art centres/ art organizations
- Presence of training centres/workshops
- Availability of unskilled /skilled workers
- Presence of supply/ demand based connection
- Availability of technology in the creative/innovation work
- Access to technical support system
- Access to technical training centre

Network base:

- Presence of supply/ demand based connection

Technological base:

- Availability of technology in the creative/innovation work
- Access to technical support system
- Access to technical training centre
- Ability/Trained to use the technology
- Maintenance of the technical instruments/help

The third category under heritage and cultural indicator which portrays the socio-cultural behavior as well as activities of the pocket, this indicator is divided into base of attraction, recreational, tourism, and ambience quality of the area as a whole.

Attraction base:

- Presence of recreational activity(food joints/leisure points)
- Presence of Temple/Mosque/Church/others
- Presence of creative communities/settlements
- Presence of historical/heritages structures (monument, old residential etc.)
- Presence of museums/libraries
- Historic function/use and current function/use

Recreational base:

- Availability of parks/leisure spaces
- Availability of open spaces
- Availability of water bodies

Tourism base:

- Presence of Hotels/guest house/lodges
- Presence of Restaurants & cafes (formal)
- Presence of Road side food stalls (informal)

Ambience:

- Availability of space to expand
- In terms of attractiveness, noise level, distinct feature, cleanliness
- Signs of encroachment in the area

Survey Design

The observation done for the reconnaissance survey is mostly on the presence and utilization of existing resources and facilities throughout the selected pocket. The following three methods have been taken for completion of this study:

Survey Description: A detailed questionnaire survey to describe the existing situation of the micro-zones was prepared for the study. To scaling responses in survey research, Likert scaling approach has been used. Based on 44 identified parameters options were designed from Very Poor to Excellent on five-point Likert scale.

Maps: Mapping is another way to illustrate the area of potential effects. Hence, students responsible for the mapping of area were entitled to observe, identify and mark the entities of the area on the map sheet. Later based on the referenced surveyed map updated existing land-use map, site maps were generated giving visual base for the research.

Photographs: In order to analyze the vibrant and exiting p photographs showing the existing situations of the study area, existing cultural resources, available facilities and services etc.

Survey Results and Discussion

The initial outcome of the data analyzed from the survey has been formulated by determining the mean and standard deviation of all the parameters of questionnaire as shown in the Table. 2. Later section will give the basis for the interpretations and results formed on the observations, photographs, and maps.

Table 2: Comparative table showing the difference in the means of each parameter of the Boipara and Kumartuli

	Kumartuli (K)		Boipara (B)		K&B			
	Mean	SD	Mean	SD	Mean	SD		
Physical	Transportation Base	Availability of motorable pucca /motorabe kutchra/non motorable pucca/non-motorable kutchra road	3.31	0.63	3.85	0.99	3.58	0.86
		Availability of footpaths	1.38	0.77	3.00	1.58	2.19	1.47
		Accessibility of the streets(side lanes/alley)	3.00	0.58	2.69	1.49	2.85	1.12
	Infrastructure and services base	Maintenance and cleanliness of streets	2.54	0.88	3.08	0.76	2.81	0.85
		Availability of taxi /autos/vans/rickshaw(Para transit)	2.23	1.17	3.85	1.07	3.04	1.37
		Availability of water transportation facilities (ferries, jetties)	2.15	1.14	1.08	0.28	1.62	0.98
		Availability of parking facilities	1.92	0.95	1.54	0.97	1.73	0.96
		Availability of street lights	3.38	0.65	3.54	0.66	3.46	0.65
		Availability of power and water supply	2.92	0.90	3.77	0.83	3.34	0.94
		Availability of retail shopping (small scale)	2.77	0.83	3.38	1.39	3.08	1.16
	Employment Base	Condition of fixed structure/temporary structure	3.46	0.88	4.15	0.80	3.81	0.90
		Availability of storehouse/warehouse/godowns for raw/finished materials	3.23	0.93	2.85	1.52	3.04	1.25
		Other organizations (NGO/CBO/ Associations/clubs/others)	2.62	1.19	2.54	1.20	2.58	1.17
Functional	Employment Base	Availability of job throughout the year	2.62	0.96	3.54	0.88	3.08	1.02
		Availability of alternate job	2.31	0.75	2.46	0.97	2.38	0.85
	Creative/ innovation base	Presence of medium /large scale industries	2.15	0.90	2.15	1.14	2.15	1.01
		Presence of small scale /cottage industries	2.85	1.14	2.38	1.26	2.62	1.20
		Any existing govt. scheme /support to owners	1.92	1.12	1.85	1.07	1.88	1.07
		Presence of creative industries(cottage/creative	2.92	1.26	2.54	1.56	2.73	1.40
		Presence of local performing arts/art centres/art organizations	1.69	0.63	1.15	0.55	1.42	0.64
		Presence of training centres/workshops	2.23	0.93	1.38	0.65	1.81	0.90
		Availability of unskilled/skilled workers	3.38	1.19	3.15	1.07	3.27	1.12
		Presence of supply/demand based connection	3.23	1.17	3.85	0.90	3.54	1.07

SWOT Analysis for Boipara:

The data collected from the reconnaissance survey of Boipara has been analyzed to obtain strength, weakness, threat and opportunity of the pocket of research area in the above mentioned format in table. 3.

Table 3: SWOT Analysis of Boipara, College Street, Kolkata West Bengal

STRENGTH	WEAKNESS
<ul style="list-style-type: none"> • Good connectivity with adjacent zones. • Availability of different modes of transportation (trams, bus, hand pulled rickshaw, taxi, auto, and private car. • Presence of educational institutes • Production and availability of literature based books • Heritage assets • Presence of market • Availability of transportation for • Symbiosis of the contrast settlement of east-west culture in a space • Presence of creative economy based market • Presence of Greenery and park with water body, College Square. • Presence of artistic innovation through the extent art practices • Illustration art market • Knowledge oriented space • Presence of library 	<ul style="list-style-type: none"> • Water locking and over flow of water to the streets • Over flowed crowd • Lack of wealth for preserving residential heritage building • Lack of adequate space for access to books • Lack of adequate Street signages and indicators • Unorganized hoarding, poster • Lack of sufficient warehouse for storing books

OPPORTUNITY	THREAT
<ul style="list-style-type: none"> • Availability of physical and social infrastructure • Potential for development of public spaces and recreational areas • Restoration of the presidency boarding house, Makham Kutir, press land building • Tourism potential • Creative utility of unused Piari Sarkar Street and Lane • Adjoining parking arrangement • True restoration of creative culture through the livelihood • Gallery of Rare Book Collection • Preservation of old manuscript 	<ul style="list-style-type: none"> • Political violence in the institutional area • Environmental degradation due to pollution • In sufficient greenery • Water logging • Monsoon weather for unauthorized book stall • Fear of rehabilitation to the mall • Fear of extinction of the open air market by the rapid demand and changing pattern in market.

The data collected from the reconnaissance survey has been compiled the format mentioned below. Later, sorting out the relevant data sheets has been done and use for analysis to achieve mean values from each data taking under each indicator. The data were collected lane wise in each pocket of the study area. In order to evaluate the existing conditions of these surveyed pockets. Mean of every parameter has been compared with the sample mean. O evaluate physical, functional and heritage as well as cultural importance of the surveyed pocket, data has been analyzed on the basis of above mentioned forty-four parameters broadly categorized with different indicator. The inference given below has been drawn after examination and exploration of the research area. From the survey, the following facts have emerged:

Environmental Features:

Natural Site

Three Ghats are located in the region: Chapa Tola Ghat, Raj Ghat and Kumartuli Ghat along the eastern bank of river Hooghly. All Ghats are more or less used by local people for regular activities but from the view of artifacts, Kumartuli Ghat plays an important role. Kumartuli Ghat is mainly accessed by craft artisans for import of raw material: Clay (mati), straw and bamboo.

Heritage Structure

Many historical and heritage structures have been found along the river and on Strand Bank Road. All the structures located here were built around the colonial time. But the interesting thing is that not all the structures and building are made of colonial architecture. These building constitute a combination of Colonial and Indian architecture. Some of these houses are of typical 'Bengal style'. Therefore the uniqueness of aesthetic values of these heritage structures is highly appreciative in a global scenario.

Unfortunately, today, these buildings are facing a lot of challenges due to intervention of local people including brokers of land, promoters, and even the house owners. The local or state government has taken no initiatives for preservation. We also found some small forms which have little heritage value but are likely to add to the regions.

Local Engagements of Historical Structure (for partial usage)

It was observed that historical buildings in the area were used by local partisans for temporary purpose like storage of material. Before the Durga Puja, this craft region faces a lot of challenges: shortage of space being one of them. It was observed, that artisans take on rent courtyards, rooms, walls or even outer sheds of old and historical buildings (which are left unused by the owners). Some of them even occupy these spaces illegally for a short period of time.

Space for raw material processing and transportation along riverside

By the term ‘clay images’ is meant the word terracotta which means ‘unbaked clay image’ rather than ‘baked’ or ‘fired’ (terracotta) clay images. The clay images can be found in Hindu shrines and temples as well as at temporary space (season based) at the major festivals such as Durga Puja during autumn. The use of terracotta as a medium finds its way in making of classical iconographical canons and other texts for making religious icons.

The tradition of clay image making is mentioned in various ‘SilpaSutras’ and also in the canons of Hindu iconography, as well as in several ‘Puranas’. Clay has always been included in lists of suitable material for idol making.

Clay images used for worship are generally referred as ‘mritnmaya’ or mrittika-pratima’. The clay images are made using various types of clay over a frame of bamboo with the bulk of figures being initially formed with straw. Once the celebration is over, most of the images are immersed in rivers and ponds, some are even left under trees or out in the open to disintegration in course of time. A rural tradition, that eventually became an urban practice.

Traditional practice of Durga Idol Making - Evolving Expressions

In the classical tradition, two types of décor is followed for Durga Idol making. Here are some research findings:

i/ Sholar Saj or Sola Pith: Core of Pith plant which grows in marshy land, generally referred as ‘Shola’ in Bengali.

ii/ Daker Saaj: Traditionally, silver plates, brought by postal service (dak) from Germany, beaten to thin leaf was used to décor the idols. Hence the name Daker Saaj, but at present days supplied by local traders.

In classical tradition, clay is applied in layers over the basic frame which is made of bamboo with dried straw (armature) to form the image of the idol of Durga. This is done carefully over a period of time using clay with a variety of ingredients. Various literature state that this process has a significance which transforms the clay to flesh and the human body since a common global belief exists that man is somehow connected with clay or earth. Through such several layers of clay over the rough surface of the armature, cloth is used to provide smoothness and final shape is rendered.

- The clay used for preparing the Idols (artifacts) must be unbaked or ‘apakva’ (half baked) and rather than terracotta or fired clay. The clay is dried in the sun, maintaining the tradition of unbaked clay called ‘terruruda’. This may have a link with fertility and if the image is immersed in a river, the worshipper is in fact returning the earth. The worship of terracuda images in Bengal is a regional practice which is a product of both classical and folk influences.
- Over this images, an initial white paint is applied. Subsequently, colours formulated by the artisans are applied to give the final touch. Colours are made from natural ingredients, even the brushes.
- Of late artisans are using inorganic colours available in bottles to provide the finishing touches as the rush for delivery on time during the festival season mounts. Humid and hot weather or sudden rains at times forces the artisans to use praying techniques and Bunsen burners to hasten the process.
- Finally ‘saaj’ or decoration by ancillary artifact which are also produce by a set of traditional artists of the region are used. The dresses (sari) is cladded to the clay idol with a homemade glue - powder made from the bark of a plant called sisris. The powder is boiled in water at a particular temperature to reac the correct consistency thus providing desired stability.

Pattern of craft corridor based on artisan’s Studio, use of material, pattern of work and shop

During the study of the zone, identification of the craft corridor based on artisans’ studio, use of material, pattern of work, location of shop, and residential areas were covered. Following two indicators have been selected from the survey:

Artisans’ Studio and Residential Area

In this region we have found that build structures of artisan studio is commonly used as well as residential purposes. Along the roadside, mainly Bonomali Sarkar Street, Durga Charan Banerjee Street, Rabinbdra Sarani, there exists Studio-cum-shop. The backyards of the structures are the living place. Unfortunately, some armature workers with no permanent studio even work on roadside (footpath).

Artisans and material based on craft corridor

Availability of various type of Corridor in this region, mainly Bonomali Sarkar Street, Durga Charan Banerjee Street, Rabindra Sarani according to use of material and type of works. The material used are like Clay, fiber casting, sola pith, plastic, wood, terracotta, mixed Media, and so on. Other section is type of works like some set of studio is replicate historical images and portrait of 3D and relief base work.

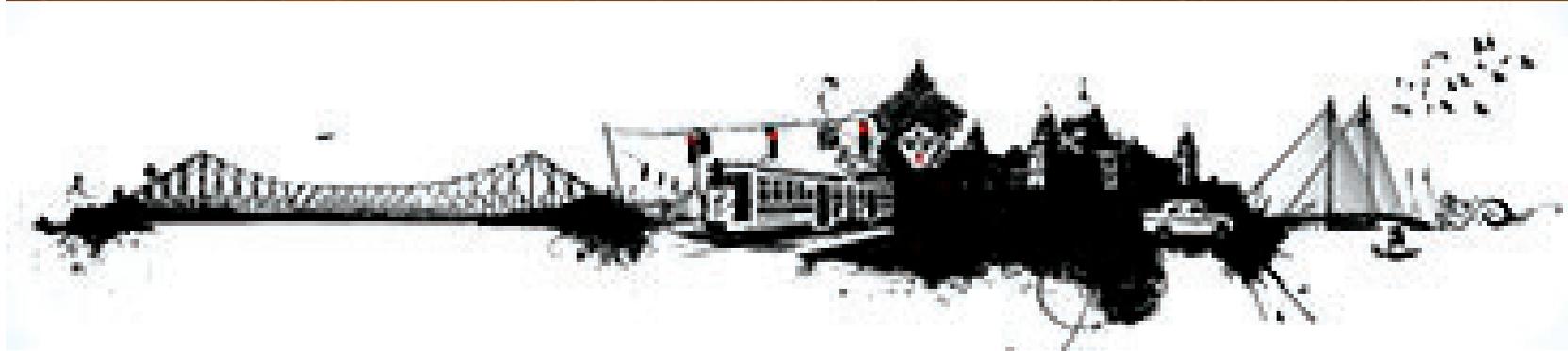
SWOT Analysis for Kumartuli:

The data collected from the reconnaissance survey of Kumartuli has been analyzed to obtain strength, weakness, threat and opportunity of the pocket of research area in the above mentioned format in table. 4 below.

Table 4: SWOT Analysis for Kumartuli zone, Kolkata, West Bengal

STRENGTH	WEAKNESS
<ul style="list-style-type: none"> • Traditional and historical values • Highly artistic and aesthetical sense of artisans • Huge possibilities of Job creation • Unique traditional style • Indigenous creative artistic activity • Fine quality of craftsmanship and elegant work • Creation of experimental work like metallic visual effect on clay idol etc. • Demand of product at National or International market 	<ul style="list-style-type: none"> • Lack of any educational knowledge & awareness • Lack of better business strategic • Lack of attention among the newer generation • Lack of awareness on variety and up gradation of the traditional form and pattern • Lack of awareness to the changing modern demand and new fashion trends as well as international markets

OPPORTUNITY	THREAT
<ul style="list-style-type: none"> • Linkage between Traditional forms and Modern popular form • Professional Training Centre • Skilled artisan • Unique Style and Traditional Technique • Heritage-Craft-Corridor of a Historic City • Traditional Cultural property attached in Tourism Industry 	<ul style="list-style-type: none"> • Unsatisfactory workshop • Insufficiency of Natural Light • Competition with Artificial Fibres • Lack of Technical Expertise • Changing Fashion Trends • High Cost Inputs & Low Returns • Lack of raw materials • Other Business Opportunities • No active Government Policies or Schemes • Crisis of stable no. of Skilled Workers



Conclusion



Conclusion

The US Environmental Protection Agency (EPA) notes that, 'To remain competitive, communities will need places that respond to changing attitudes and behaviors driving people and businesses toward the center of metropolitan areas.' Hence, the need to identify, evolve the drivers responsible for the innovations, creativeness and competitiveness in each of the selected micro-zones.

The study is based on the reconnaissance survey provided a general picture of the two micro-zones: i.e., Kumartuli Craft Village and Boipara, College Street. For any research the baseline study is most important. Therefore the study conducted on these two micro-zones have made oleswahus to iderehly the innovation parameters, issues and potentials of the existing scenario. Following major observations have been made:

- The arts and cultural industries propel the economy. The sarveys has demonstrated that creativity is a primary driver of innovation or improvement, and that innovation often results from the innovative efforts of different sectors based on industries, creative economy, knowledge, informal activities like hawker, cultural and etc. Further studies will be carried out for other selected micro-zones.
- Hence it can be concluded on the basis of the survey and analysis done that there is a lack of supportive infrastructures, government policies and development/renewal projects for the up gradation of context as well as variety based areas, preservation and maintenance of the heritage and cultural features of the place. There is need to research the gap areas responsible for changing the quality of life of the people and area which eventually will help in creating more number of creators and innovators.

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Glimpses of the Survey





Appendix

1. The questionnaires formulated for the reconnaissance survey are given below:

Reconnaissance Survey Questionnaire:	
Name of the surveyor:.....	Weather:
Date:/07/2015	Time: location:

For the study of area: _____

Indicators	Categories	Parameters	Very poor	poor	Average	Good	Excellent
			1	2	3	4	5
Physical	Transportation base	Availability of Motorable pucca/ Motorable kutcha/ Non-motorable pucca/ Non-motorable kutcha road					
		Availability of footpaths					
		Accessibility of the streets (side lanes/ alley)					
		Maintenance & Cleanliness of the streets					
		Availability of taxi/autos/vans/rickshaw (Para-transit)					
		Availability of water transportation facilities (ferries/jetties)					
		Availability of Parking facilities					
	Availability of street lights						
	Infrastructure & Services base	Availability of power & water supply					
		Availability of retail shopping (small scale)					
		Condition of fixed structure/ temporary structure					
		Availability of store house/ware house/godowns for raw/finished materials					
		Other organizations (NGO/CBO/associations/ clubs/others)					

Indicators	Categories	Parameters	Very poor	poor	Average	Good	Excellent
			1	2	3	4	5
Functional	Employment base	Availability of job throughout the year					
		Availability of alternate job					
		Economic condition of owner					
		Presence of medium/large scale industries					
		Presence of small scale/cottage industries					
		Any existing Govt. scheme/support to owners					
	Creative/ innovation base	Presence of creative industries (cottage/ creative)					
		Presence of local performing arts/art centres/ art organizations					
		Presence of training centres/workshops					
		Availability of unskilled /skilled workers					
	Network base	Presence of supply/ demand based connection					
	Technological	Availability of technology in the creative/ innovation work					
		Access to technical support system					
Access to technical training centre							

Indicators	Categories	Parameters	Very poor	Poor	Average	Good	Excellent
			1	2	3	4	5
Heritage & culture		Ability/Trained to use the technology					
		Maintenance of the technical instruments/help					
	Attraction base	Presence of recreational activity(food joints/ leisure points)					
		Presence of Temple/Mosque/Church/others					
		Presence of creative communities/settlements					
		Presence of historical/heritages structures (monument, old residential etc)					
		Presence of museums/libraries					
		Historic function/use and current function/use					

Indicators	Categories	Parameters	Very poor	Poor	Average	Good	Excellent
			1	2	3	4	5
Heritage & culture	Recreational base	Availability of parks/leisure spaces					
		Availability of open spaces					
		Availability of water bodies					
	Tourism base	Presence of Hotels/guest house/lodges					
		Presence of Restaurants & cafes (formal)					
		Presence of Road side food stalls (informal)					
	Ambience	Availability of space to expand					
		In terms of attractiveness, noise level, distinct feature, cleanliness					
		Signs of encroachment in the area					

2. The survey questionnaire formulated for Kumartuli pocket through based on visual aesthetic and traditional craft :

Location of Survey: Date: Time:

1. Environmental features ; natural site and resource relationship between traditional craft community and the River Ghats								
Indicators	Categories	Parameters	Stock analysis Y/N	Street Name:				
				Very Low	Low	Moderate	High	Very High
Assessment of availability / presence of Environmental features along with the riverside	Natural sites and resource	Collection of raw material	1.1	1	2	3	4	6
			1.1.1					
			1.1.2					
			1.1.3					
			1.1.4					
			1.2					
Water Transportation			1.2.1					
			1.2.2					
			1.2.3					
			1.3					
Temporary Storage after immersion			1.3.1					

Indicators	Categories	Parameters	Stock analysis Y/N	Street Name:								
				Visual Observation Physical overview								
				Very Low	Low	Moderate	High	Very High	High			
Assessment of availability / presence of Environmental features along with the riverside	Attractions of Archaeological values	1.4	Significance of Local heritage in relation to the place									
		1.4.1	Presence of significant historical structures along the riverside									
			Palace									
			Famous Resident									
			zamindari house									
			Others									
			1.4.1.1	If available, which part of the heritage structure is physically in use for studio purpose								
				wall								
				Room								
				Courtyard								
				Others								
				1.4.1.2	If available, which part of the heritage structure is physically in use for storage purpose							
					wall							
					Room							
					Courtyard							
			Others									
	Based on Aesthetic Values	1.4.1.3	Presence of ancillary artefact studio within the heritage structure									
			Availability of any street statues installation as a mode of aesthetic value									
			Sculpture									
			Monument									
			Mural Work									
			Others									

Indicators	Categories	Parameters	Stock analysis Y/N	Street Name:					
				Visual Observation Physical overview					
				Very Low	Low	Moderate	High	Very High	
Assessment of availability / presence of Environmental features along with the riverside	Based on Aesthetic Values	1.4.3 Availability of aesthetical view of the river bank when viewed from River side		1	2	3	4	6	
		1.4.3.1 If any obstruction, then in terms of							
		Billboard							
		Parking zone							
		Unorganised Structure							
		Others							
		1.4.4 Availability of elements with little heritage value but are likely to contribute to the region							
		Note: Need photograph different direction							
		1.4.4.1 If available, Presence of such heritage value with respect to :							
		Temple							
Mosque									
Church									
Others									

2. Corridor based Artisans Studio and Residential Layout									
Indicators	Categories	Parameters	Stock analysis Y/N	Street Name:					
				Visual Observation Physical overview					
				Very Low	Low	Moderate	High	Very High	
				1	2	3	4	6	
Presence of Spatial structural	Formation of area	2.1 Artisans Studio and Residential area							
		2.1.1 Availability of various type of Corridor in this region							
			Clay						
			Fiber						
			Metal						
			Paper						
			Plastic						
			Wood						
			Mixed Media						
		2.1.2 Existing Pattern of Artisans Studio and Residential area along the Road (overview)							
			Scattered						
			Clustered						
			Mixed						
		2.1.3 Is the built structure jointly used for Studio + residential purpose							
			Yes						
	No								
2.1.4 Availability of working space									
	Strongly satisfactory								
	Satisfactory								
	Unsatisfactory								
2.1.5 Availability of Natural light									
	Strongly satisfactory								
	Satisfactory								
	Unsatisfactory								

Indicators	Categories	Parameters	Stock analysis Y/N	Street Name:						
				Visual Observation Physical overview						
				Very Low	Low	Moderate	High	Very High		
				1	2	3	4	6		
Presence of Spatial structural	Formation of area	2.1.6	Availability of space for processing of raw materials in studio area							
		2.1.7	Presence of armature maker artist studio and residency							
		2.1.8	Presence of historical structures within Studio and Residential area	Palace						
				Famous Resident						
		2.1.8.1	Local engagements of historical structure (for partial uses)	Historical Building						
				Studio purpose						
				Process of raw material						
				Storage purpose						
				For residency						
				Other						
Presence of Spatial structural	Type of Artisans	2.2	Artisans and Material use							
		2.2.1	Availability of various type of traditional artist	Potter						
				Clay modeller						
				Armature maker						
				Ceramist						
				Mosaic artist						
				Fiber artist						
				Woodworker						
				Papermaker						
				Colour artist						
Decorative Designer										
Experimental Way										

Indicators	Categories	Parameters	Stock analysis Y/N	Street Name:					
				Visual Observation Physical overview					
				Very Low	Low	Moderate	High	Very High	
		2.2.2		1	2	3	4	6	
		Presence of specific corridor for antique copies and replication of historical statues							
		2.2.3							
		Presence of specific corridor for Ancillary artefact							
		paper pulp craft							
		Jori work							
		Others							
	Type of Artisans	2.2.3.1							
		Existing Pattern of Artisans of Ancillary artefact Studio and Residential area along the Road (overview)							
		Scattered							
		Clustered							
		Mixed							

AMOUNT	CATEGORIES	PARAMETERS	Very poor	poor	average	good	excellent		
			1	2	3	4	5		
Availability of Structural Elements of Design	Structure of envelope	Presence of formal market) or covered space							
		Presence of open air space(informal market)							
		Presence of natural or breathing spaces	Greenery						
			Water body						
			Concrete space						
		presence of usable space	used space						
			unused space						
			vat point						
		Presence of Service space	motor able street						
			non-motor able street						
footpath									
Availability of Structural Elements of Design	Nature of historical and heritage backgrounds	Presence of creative space							
		Presence of parking space	Free parking						
			Fee parking						
			Illegal parking						
		Presence of vertical space: wall	Quantity						
			Maintenance						
		Nature of historical and heritage backgrounds	Presence of heritage and Historical buildings	Academy					old
				Museum					new
				Library					
				residential					
Temple									
Missionary									
Mosque									
Presence of intellectual hub									
Shop									
Other									
Nature of historical and heritage backgrounds	Presence of a visible density of crowd/users by passes	Academic place							
		Street							
		Footpath							
		places of rest shops							
		Other places							
Nature of historical and heritage backgrounds	Time:								
Nature of historical and heritage backgrounds	Season:								

AMOUNT	CATEGORIES	PARAMETERS	Very poor	poor	average	good	excellent
			1	2	3	4	5
Availability of allied physical infrastructure	Municipal services	Availability of street accessories					
		Availability of water supply, toilet, place to rest					
		Availability of free space for hoarding, poster and advertisement					
		Availability of municipality care for security of the space					
		Availability of information center					
	Transportation indicating elements	Availability of space for keeping temporary unauthorized book and book store					
		Availability of vehicle					
		Availability of book transportation to export and import					
		Availability of paved road					
		Presence of creative books					
	Economic infrastructure	Presence of publishing house					
		Presence of local organization for creative performance					
		Availability of skilled and unskilled worker					
		Availability of artefacts					
		Availability of book oriented materials and shop					
Tourism infrastructure	Presence of road side food stall						
	Presence of hotel/ guest house /lodge						
	Presence of legendary restaurant and café						
	Presence of visual attraction						
	academic activity and events	Literature base					
Cultural and normative infrastructure	Science and technology						
	Political and Social						
	Presence of color and decoration of Space						
	Design of usage of the space						
	Presence of center formation						
	Availability of folk evidence formation						
	implication of the urban beautification effects by	Organization					
		KMC					
		Authorized comity					
		Residency					

AMOUNT	CATEGORIES	PARAMETERS	Very poor					excellent
			1	2	3	4	5	
Evaluation of visual elements	Spatial and visual aesthetics	Clarity networks of street and lane	Transparent					
			Chaotic					
		Depth and light of foot path	Overlapping					
			Highly Pleasurable					
			Moderate pleasurable					
			Complex					
	Relief space between buildings							
	Age of buildings	Old						
		New						
	Visual	Panoramic view area						
			Color					
		Wave of crowd	Natural composite					
Man made								
Rhythmic								
Complex/ non-rhythmic								
Detached								





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