

L

URBAN PARK | MAIDAN



M

SQUARE | CHOWK



S

COURTYARD | CHATTA



Figure 23. Illustrations by Author

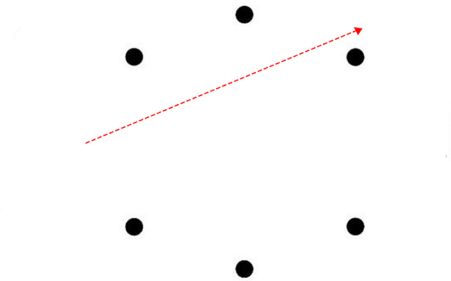
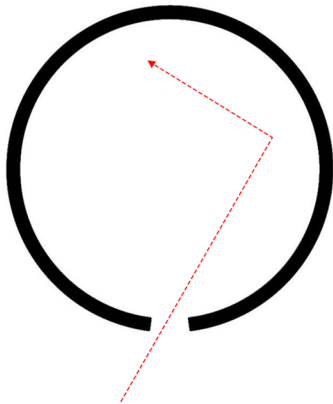


Figure 24. Top Left : Cubbon urban park - an urban park vs Right : Rajendar Maidan flower market, a maidan (Photographs by Dilip De Cunha and Arundhati Mathur, Maidans of Bangalore)
Bottom : Typology of Maidan : Left : Definite Boundary of a destination, Right : Maidan as a thoroughfare (Illustrations by Author)

D. SHADES OF GREEN

Observation studies: Looking closely from a distance

To bring out the idiosyncrasies, each category namely Maidan, Chowk and Chatta would be analysed on a few parameters – Definition and Programmatic dispositions, Formal language and Boundary conditions and Shape and Size. The recurrent characteristics and learning would be enumerated as reflections at the end of each section.

D1: Maidan

Size 'L' open space

Definition and Programmatic dispositions

A maidan can be described as an open space where the inhabitants of an informal settlement hold city level interactions. In the case of the selected case studies the primary programs were fairs, games, temporary markets etc. occurring alone or sometimes simultaneously. Along with these, inhabitants of the walled city of Shahjahanabad organise a 'Chor Bazaar', a temporal market selling stolen or illegally acquired products including antiques, electronic goods, shoes and watches every Thursday. Similarly, Chirag Delhi inhabitants hold a pickle and dried fruits markets every Friday. Sarai Kale Khan residents use the Maidan space as a space for cattle grazing and fashion shows for the cattle.

In perception, maidans can be seen as a threshold where the activities organized by the inhabitants can gather attention and active participation from the actors outside the settlement without any hesitation and judgment. For people outside the settlements, such markets and events have become extremely popular and an integral part of the cultural identity of Delhi as they offer unique experiences.

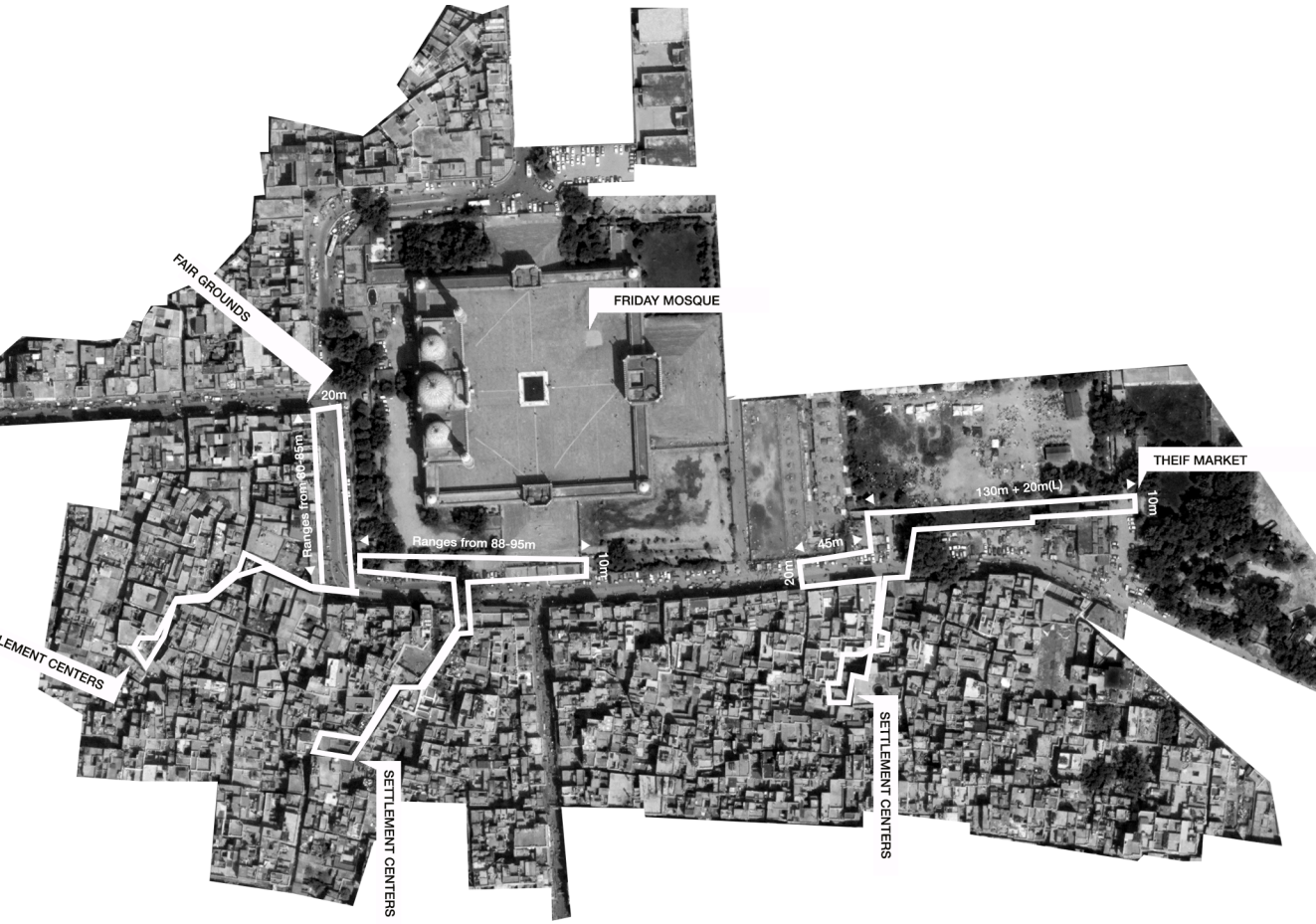


Figure 25. Maidan in Shahjahanabad - Shape and size; Illustrated over Google Earth by Author, Maidan Study for the walled City, N ^

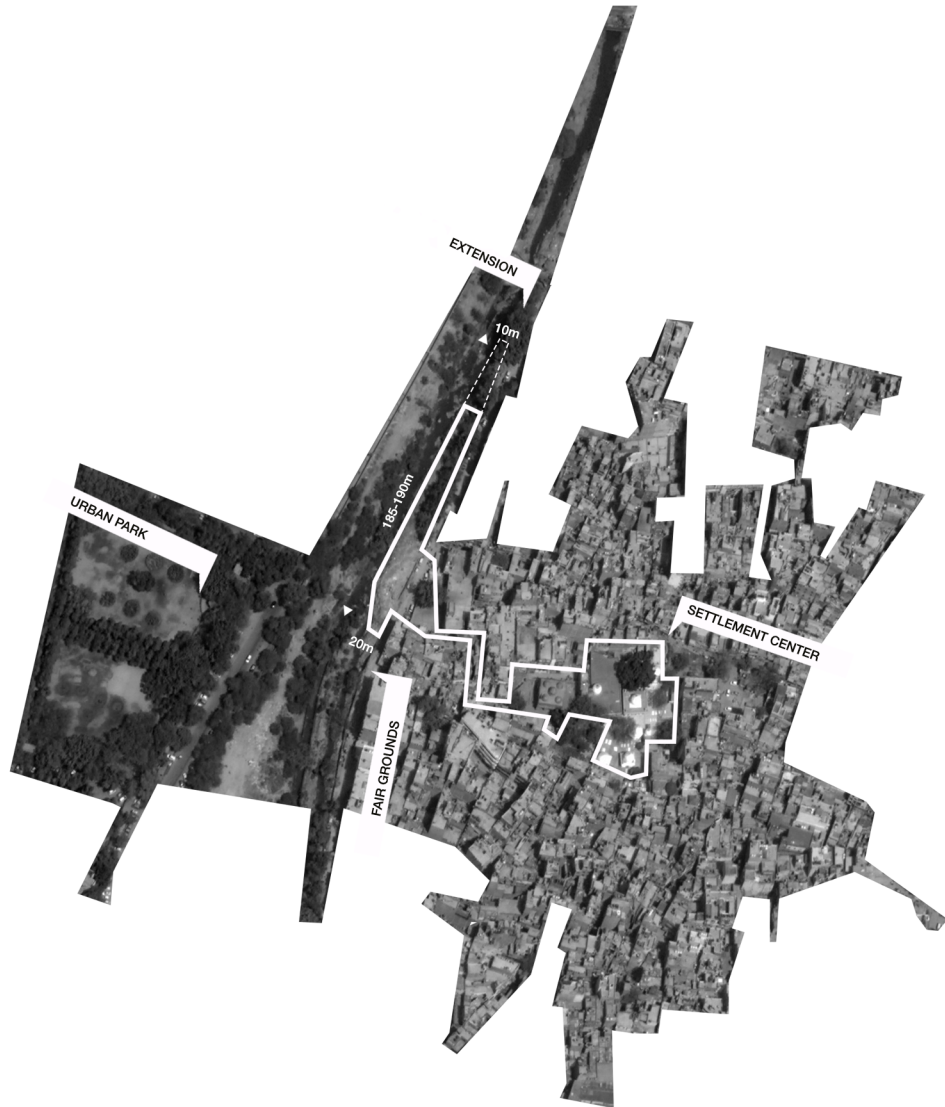


Figure 26 . Maidan in Chirag Delhi : shape and size as illustrated over Google Earth by Author, Maidan Study for Chirag Delhi . N ^

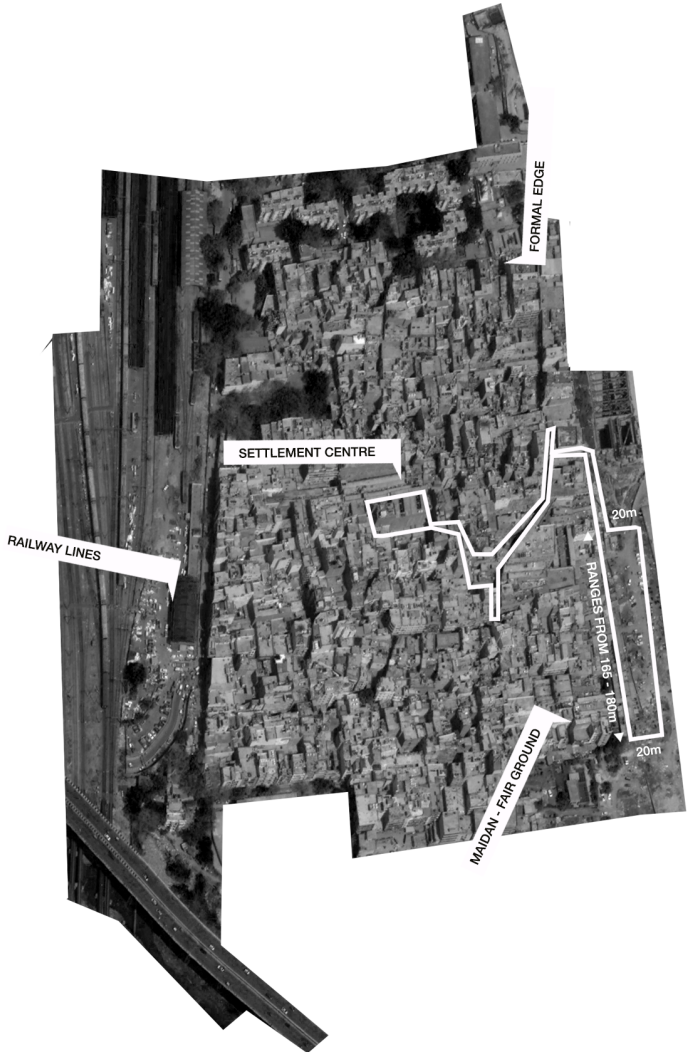


Figure 27. Maidan Study for Sarai Kale Khan: Shape and Size, Illustrated over Google Earth by Author, N ^

Formal language and Boundary conditions

In the chosen case examples, the maidan typology was observed as composed of two elements: a barren ground on the edge of the settlements without a defined boundary and an open-space next to settlement centre. Both the elements are observed as connected through a legible and accessible street. There was hardly anything built or grown on the barren edge, apart from a small exception where a small plot is used for cattle grazing in Sarai Kale Khan. However on one of the visits, it was observed that the weekly market had spread out from the settlement centre out onto the barren space. At this point in time, what seemed like plot of vacant was seen appropriated as an active part of public realm.

The value of a space as big as maidans for informal settlements is similar to what urban parks hold for the city. They are used for leisure, recreation, temporal commercial activities and events, witnessing massive participation by the people from outside the settlements. Hence, in terms of formal language, they are organised to be highly accessible, porous and permeable public spaces. In fact, the extents are usually so wide-ranging and dynamic that one tends to enter, participate and exit the space almost unknowingly. Without any formal boundary, the maidan becomes highly flexible almost like a thoroughfare. This in sharp contrast to their counterparts, the urban parks, which are designed as popular destinations.

Carefully observe the dark patches in the illustrations drawn for the maidans. It is actually the same space occurring in various points of time. For an event like festivals which witness's massive participation from the city and the settlements, it enlarges and anchors itself firmly to the settlement centre to accommodate about 1500 people, on an average. However, it becomes quite localized and focussed around the settlement centre for an everyday market, a relatively intimate event of 400-600 people, attended only by the residents from immediate neighbourhoods. Thus, the maidan not only holds a wide range of occupants, it also becomes flexible in terms of area and programming, rendering it much more usable than an urban park formally designed elsewhere in Delhi. (Figure 28, 29)

Shape and Size

As discussed, this 'L' sized open space has to be big enough not just to suffice all the inhabitants but also the visitors from outside the settlement and it is not possible for the poor to carve it from the settlement itself. Therefore, it is usually an encroachment on the city's formal boundary and the barren component observed at the edge is the spatial attribute so encroached. If the space is barren and on the edge of the settlement, then how do the inhabitants acquire it without facing any evicting body or municipality disturbance? The answer lies in the shape of it.

On drawing and comparing the barren component of the maidan space in each of the settlements, it was observed that they coincidentally shared comparable dimensions- length varying from 250 to 300 meters and width varying from 15 to 22 meters. Although there is a very diffused and ever-shifting boundary edge of the maidan, it seemed taking a linear spread along one of the primary streets of the settlements in each case. (Figure 25,26,27).



Localised Event eg. Weekly Market
Area : 3670 sqm., Person Count : 600 - 650



City Scale Event eg. Fair Ground
Area : 9000 sqm., Person Count : 1500 - 1600



City Scale Event eg Special markets
Area : 8400 sqm., Person Count : 1000 - 1200

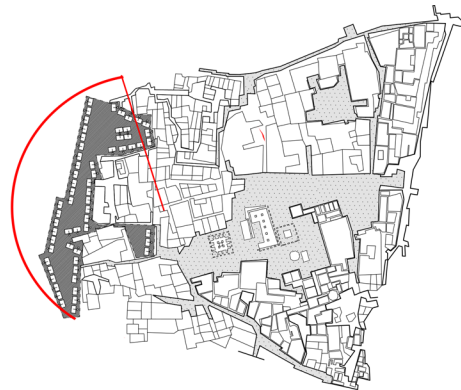


Figure 28. Forms and adaptive extents of a Maidan in Chirag Delhi, Illustration by Author, Data adapted from DUAC Chirag Report, 2016

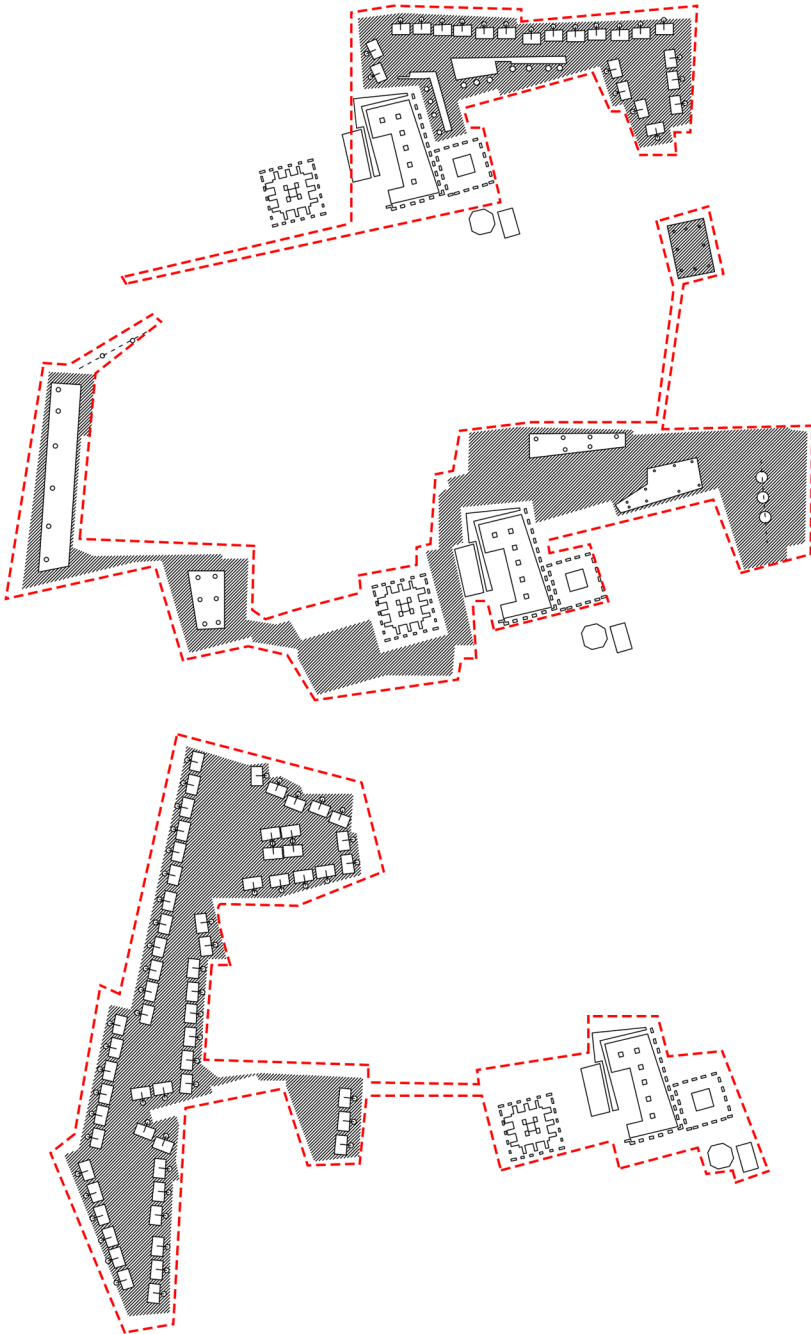


Figure 29. Forms and adaptive extents of a Maidan in Chirag Delhi, Illustration by Author, Data adapted from DUAC Chirag Report, 2016

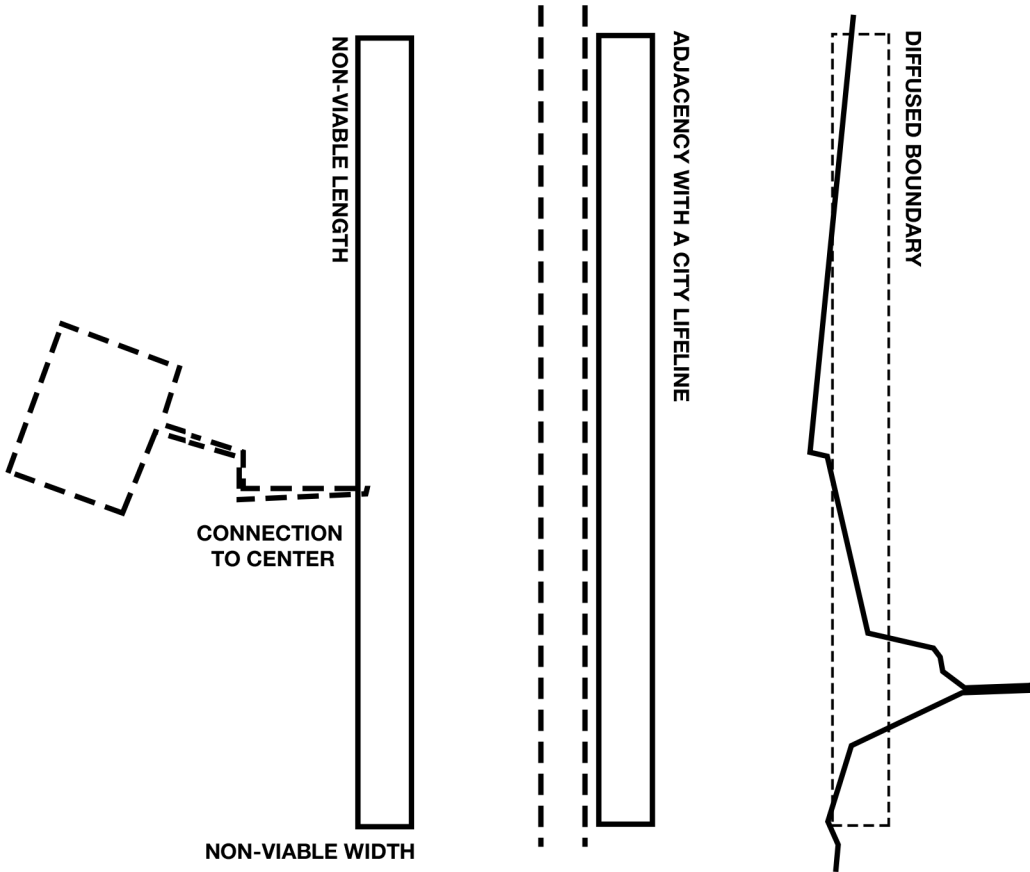


Figure 30. Illustrations by author

Reflections and typology creation

As part of the informal structure where no planner or designer is involved, such consistency proves how complex adaptive systems rear patterned results. The observed consistency also compels for identification of the operative force in this instance. One of the merits of conceiving a space linearly is that the dimensions become non-viable for any real estate developer, in turn decreasing the chances of it being absorbed in the formal design processes. Other important observation is the location, as in all the three case studies, this linear space sits next to a primary transit corridor. The master plan of Delhi makes it compulsory to leave the margins next to the roads as un-built or green.²⁴ This also curbs the possibility of the linear space being acquired by the developers. The legible and easy access to the core of the settlement allows make the inhabitants to easily appropriate or abandon the space as per the requirement. All these idiosyncrasies emanate from a negotiation between maximizing on available space as well as defending the empty spaces from formal acquisitions by competent authorities.

²⁴ Master plan of Delhi, 2021

D2: Chowk

Size 'M' open space

Definition and Programmatic dispositions

A chowk can be described as an open space where the inhabitants of an informal settlement hold community level interactions. Programmatically, they hold community-centered retail and everyday markets repeating multiple times within the settlement boundary. However, an interesting observation made from the case studies revealed that each of the chowk had a very strong attachment to some sort of resource pool. In most cases, they are also named after the said resource. For instance, the walled city of Shahjahanabad has a commercial pocket in the northern half called Chaabi Bazaar, with a natural depression storing rainwater. The communities around it have been harnessing this water traditionally for metal industry. Similarly, Chirag Delhi has a chowk where the communities have organized a bore-well for extracting underground water. The chowk is also named aptly as Borey-wala Chowk (chowk with the bore-well). In the case of Sarai Kale Khan, the communities have been keeping cattle traditionally. (Figure 32) The manure so produced was dumped in collective waste disposal lots shared by households together. Eventually, these became fertile zones and were converted into agricultural hot spots. Today, connecting agricultural hot spots largely makes the sequence of chowks in the settlement. (Figure 32)

Formal language and Boundary conditions

Chowks can be compared to squares for understanding and visualization. Unlike, the maidan, which is large and spatially non-defined, the chowks are defined enclosures. In the capacity of enclosures, they divide the settlements into smaller parcels, defining the grain of the settlement. The communities organize the chowks around resources such as water, fertile soil, and underground water reservoir. These enclosures are organized for safeguarding the resource pool on one hand and visibly displaying the end product in the public space on the other. Thus, a gradation of privacy is introduced within the settlement through this typology and one of the ways by which the communities achieve this is by creating a loop. Akhtar in his seminal works on the walled city also enumerates similar findings. He analyses that the communities articulated a system for the chowks and categorizes them into two prominent types – tree like and closed loop.²⁵ (Figure 33) The resource rich chowks are guarded more strongly in an introverted loop whereas the more public chowks are plugged into everyday routes through an extroverted loop.

²⁵ Badshah; 1983

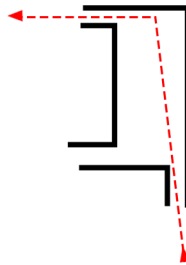
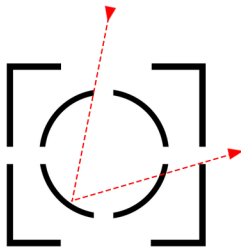


Figure 31 . Top : Photographs by Author; left : Public Plaza near Doumo Milan , Right : Chowk in Chirag Delhi
Bottom : Illustrations by Author; Left : Definite Boundary of a Plaza, Right : Rectangular Chowk



REGIME

SPACE AROUND RESOURCE

COMMON BORE WELL

Figure 32. Photographs by author

Shape and Size

In terms of physical form, one needs to understand how are these enclosures placed and negotiated within a non-designed environment. The interviews with the local inhabitants revealed that the chowk formation is a result of local knowledge gained over time, sometimes ranging over decades. Users have been observing, identifying and harvesting resources traditionally. Ostrom's common property regime is observed at play since the resources here are gathered in a communal way to optimize the process.

As established before, most of the informal settlements in Delhi are based around historical cores. Thus, the historical core is assumed as the center of any looping exercise. One of the traditional ways to create public avenues was to maximize the convenience in carrying goods in and out of the settlement. In earlier days when there were no compasses or maps, the placement of the exit and entrances to the settlement was done demarcating the direction of the nearby destinations. In each of the settlement, the historical gates were placed on the boundary pointing towards various centers of trade. The historical core was connected legibly to the gates, formulating the structure of the public realm.(Figure 34)

Now, on drawing and comparing the public and resource loop in the settlements studies, it was revealed that the resource rich pools are tied in an offset loop to the public loop, with space for inhabitation in between. Most of the chowks were observed as rectangles or distorted rectangles with a minimum of three points of entry and exit.

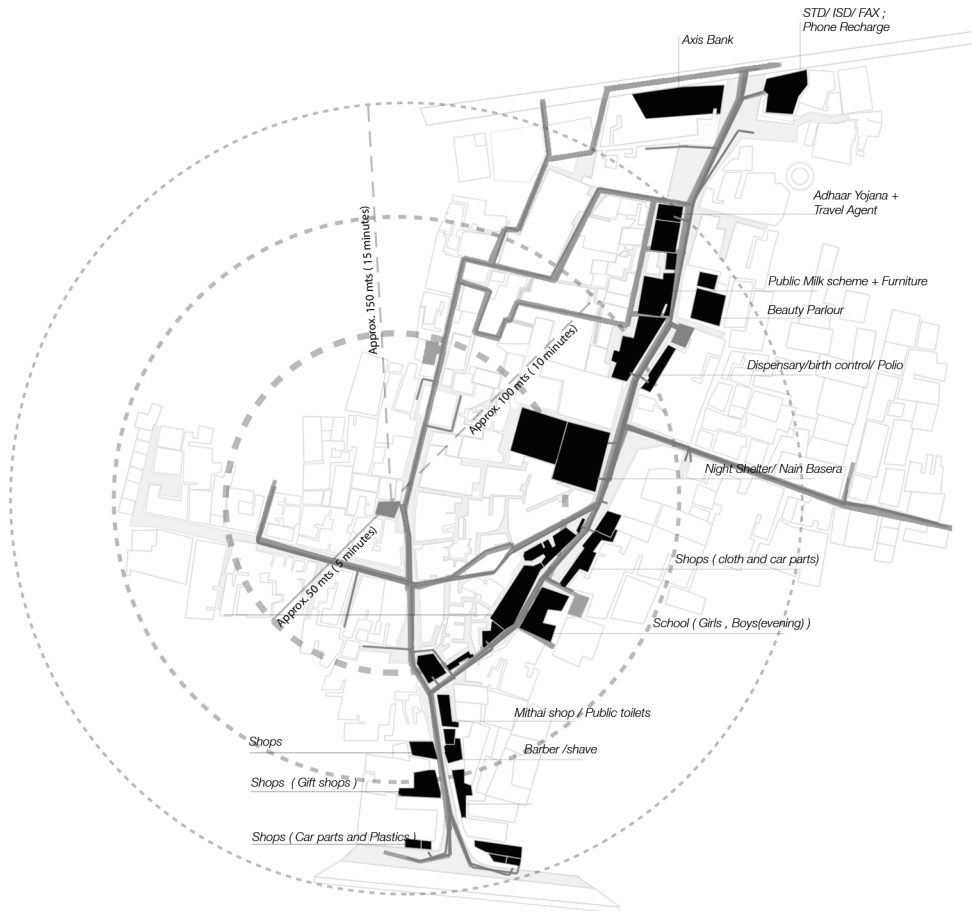
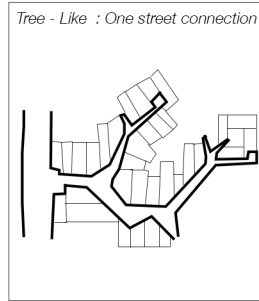
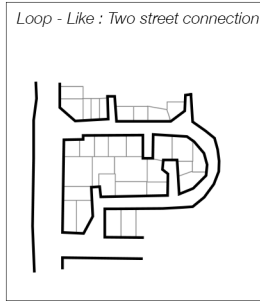
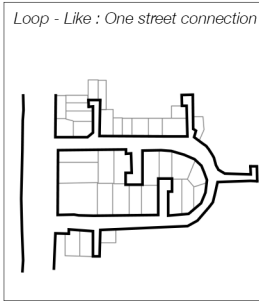
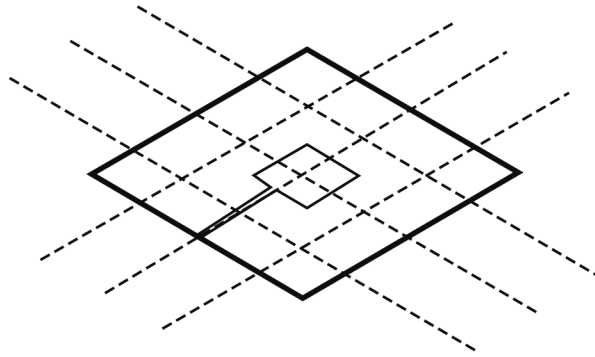
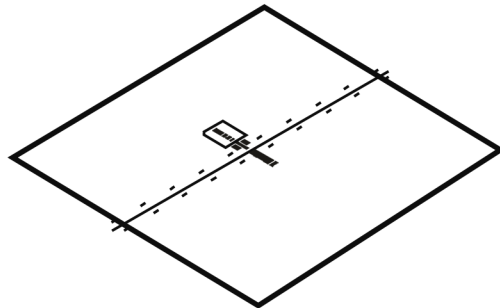


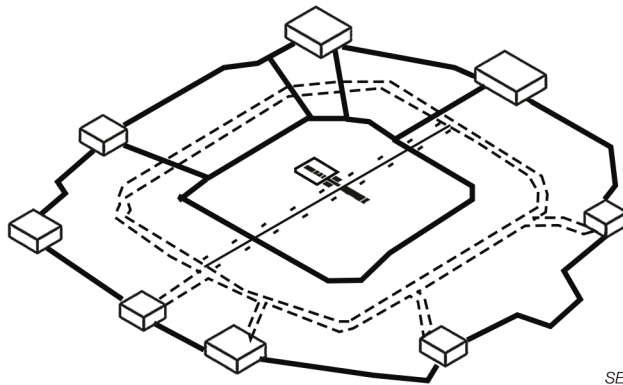
Figure 33. Illustrations by author



BOUNDARY AND CORE



PRIMARY CONNECTIONS



SETTLEMENT GATES

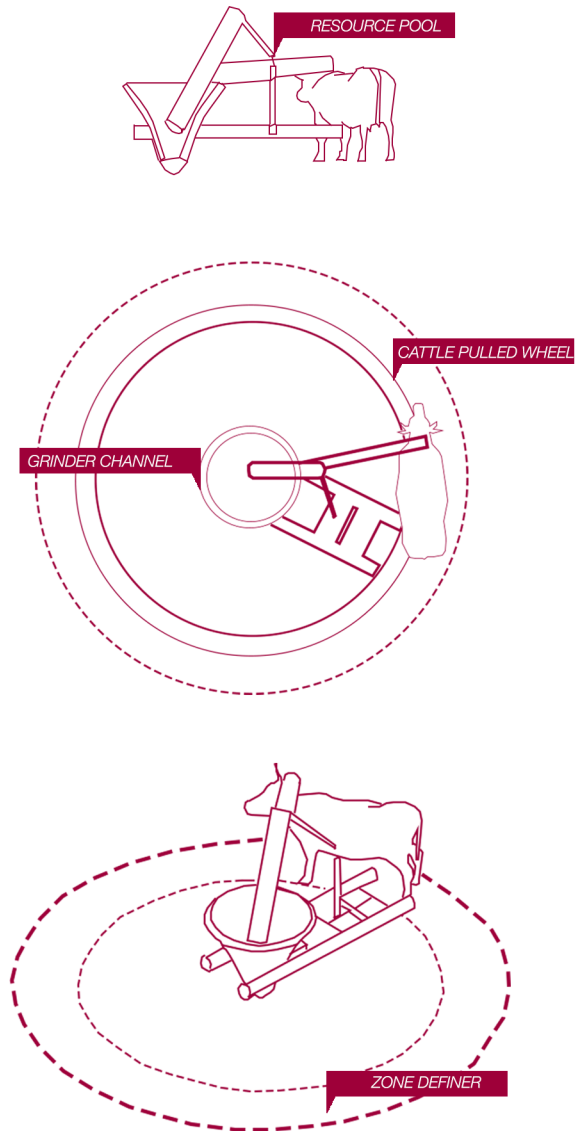


Figure 35. Illustrations by author



Figure 36. Illustrations by author

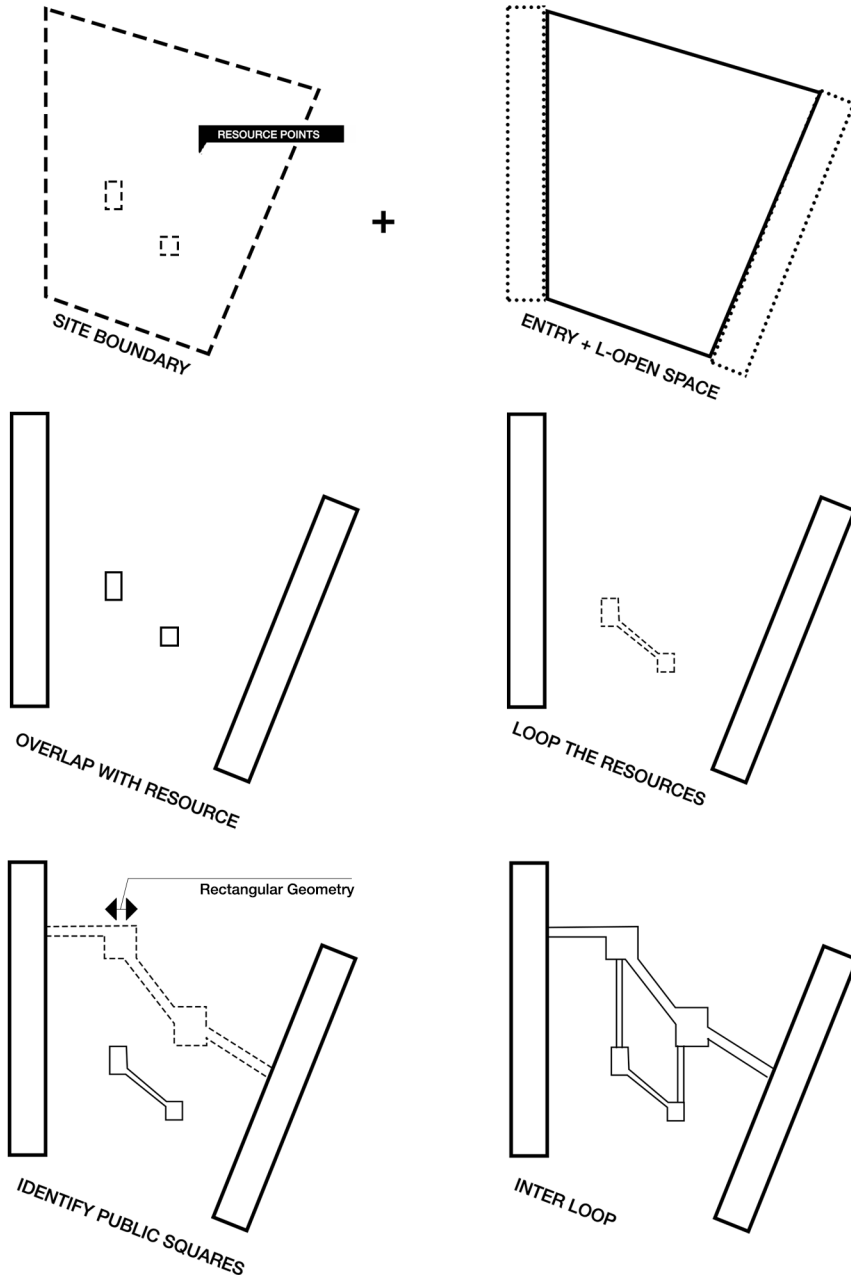


Figure 37. Street looping diagram around the resources, street syntax illustration by author

Reflections and typology creation

As a true example of Ostrom's common property regime, chowks are identified as self-organised, constructed gradually with time and superimposed by local knowledge. In the hindsight, mapping of resources and placing onto them, a community level public space comes across as a promising strategy. To achieve this process, Geographic Information System (GIS) can be used during the zoning phase to identify natural resources.

Furthermore, the looping of the public space and the resource pool in all the three cases makes it a patterned spatial typology, compelling for identification of the forces at play. In this case, economics is a visible form determinant as for systematizing the loop into public and private in the first place. However, the site visits to Chirag Delhi also revealed an inherent force at play. In the first few visits, the author could only penetrate the public loop of the settlement, completely unaware and unexposed to the resource loop of the chowks. The settlement of Chirag Delhi has four gates as drawn (Figure 34) and no matter which was chosen as the point of entry the author kept circulating within the public loop. Thus, by making sure that only a persona aware of the context can reach the resource pool, the inhabitants have used mazing as a technique to plug in defence.

The roughly rectangular geometry with numerous exit and entry also is an innovative defensive strategy as the visitor is compelled to cross a longer trajectory in a narrow section, knowing that the inhabitants are observing him. The rectangular geometries are usually paired with short sides of the dwellings giving each household a chance at using the front edge for public purpose

D3: Chatta

Size 'S' open space

Definition and Programmatic dispositions

A Chatta can be described as a central open space at neighborhood scale that distinctively is organized by member of similar familial, religious or occupational affiliations. In this case as well, the organisation is usually around the common resource except that it has a clearer spatial boundary. Aggarwal notes that in Kucha Jatmal, a Hindu neighbourhood in the walled city of Shahajahanabad, residents of the same religion came together to formulate a shrine (Temple). The space for the temple was kept central taking away a portion of four households, which in turn got smaller shop areas behind the temple complex. Each of the shop was dedicated to capacity building of the entire neighbourhood as it meant more visitors and capital gain. ²⁶ However, the temple complex is a public program, in this case it was extremely private as belonging to the members of the same community.

In certain ways, it behaves much like the chowk but the perception in the settlement renders it as extremely private and exclusive. Moreover, the exclusivity is based on a similar affiliation, in this case religious, and not limited to the geographic affinity. Similarly, In Chirag Delhi, various Islamic communities rear poultry and meat, which is forbidden in the other dominant religions in the settlement. Thus, a localised meat market is organised by the people within the neighbourhood open space. It is designed and placed inwardly, so much so that the odour of the meat does not attract attention. In the case of Sarai Kale Khan, an indigenous community practices arm and mud wrestling traditionally. To practice and participate, a wrestling rink is organised by the community. It is also placed privately within the neighbourhood as the activity is very exclusive to the community.

26 Aggarwal, Sood, Patnagar 2012



SINGLE ENTRY



PRIVATE RESOURCE



CHANGE IN SURFACE



SINGLE ENTRY



ARCHWAY AS LANGUAGE



INTO THE COURT

Figure 38. Different elements of Chatta, Photographs by Author

Formal language and Boundary conditions

A chatta can be compared to a courtyard for better understanding. It contains of a branching street off the loop formed by the chowks, which opens in an open space. While participation within the chatta space is democratic and open to all equally, the extent of ground realm and the resource so created belongs to everyone and no one at the same time.²⁷ It has only one entrance and exit, leading to a very controlled accessibility. Hence, Chatta acts as the end-point definer within the grain of an informal settlement. The boundary enclosing the chatta is usually very clearly defined enclosed with dwelling units sharing their terrace with at least one neighbour.

The site studies revealed that in all the three cases, an architectural element was used to mark out the entry-exit point. In the walled city of Shahjahanabad, Mughal arches were observed as defining the precinct. Similar arches were used to define Islamic quarters in Chirag Delhi, whereas rectangular arches or interconnected balconies defined Hindu quarters. In the case of Sarai Kale Khan, a material difference on the surface is used to determine the territory. Akhtar notes that brickbat patterns define the private quarters of the neighbourhood in some cases of the walled city as well.²⁸

²⁷ Aggarwal, Sood, Patnagar 2012

²⁸ Akhtar, Badshah; 1983

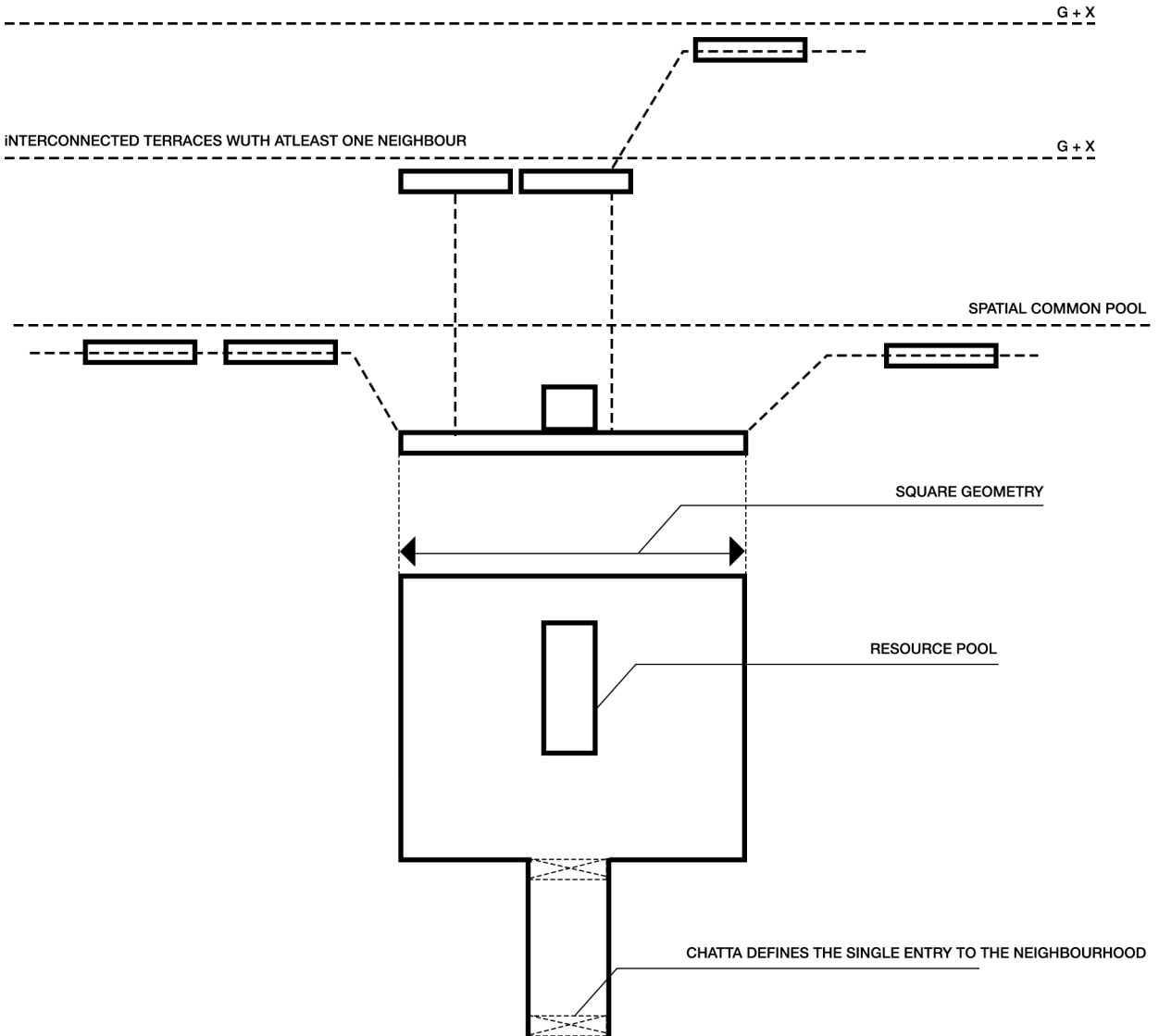
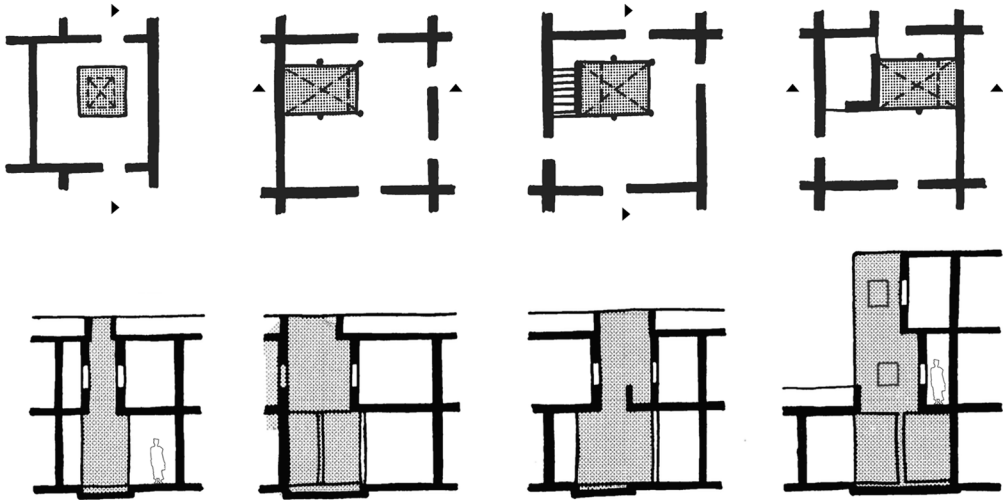


Figure 38. Generic chatta syntax, neighbourhoods formations, Illustrations by Author

Shape and Size

The shape and size of the chattas were observed as varying from neighbourhood to neighbourhood in all the three cases. It was difficult to define in terms of a specific type. Moreover, the traditionally designed chattas have undergone tremendous transformations to be classified at present. The placement and usage of courtyards in the observed settlements was found to be quite inventive and unique. The courtyard essentially was designed as a response to the hot climate. However, its present spatial nature effectively links an individual to its family and a particular community. During the site visits and the documentation, the large variety of court spaces were observed. For the purpose of this paper and for the case of Chirag Delhi, courtyards are classified on the basis of where they exist in a household and the associated gradation of privacy.

COURTS AS DEFINERS



COURTS AS ARTICULATORS

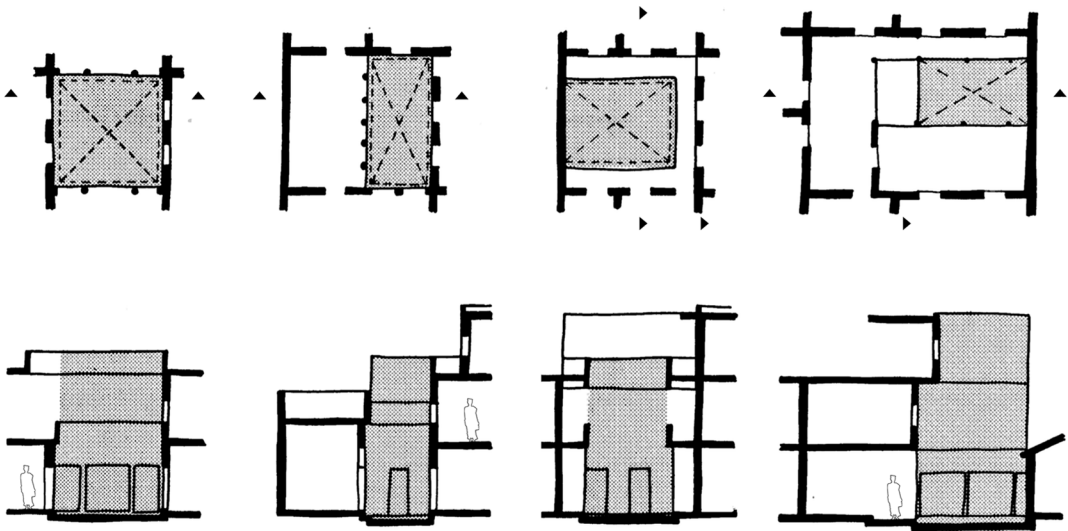


Figure 39. Courtyard diagrams as Definers and Articulators, Sketches by author over Akhtar Badshah's sketches

Akhtar suggests that the chatta could act in three ways as per the location of the same within the neighbourhood.²⁹ It becomes a transitional space if it appears in the beginning of the neighbourhood such that one needs to traverse it to reach to the households. If the chatta is further in but still fairly outside the households, it becomes a space in itself and acts as an articulator of space. In the last case, the chatta is termed as a definer if it is deep within the neighbourhood to become an extension of the room or private space.

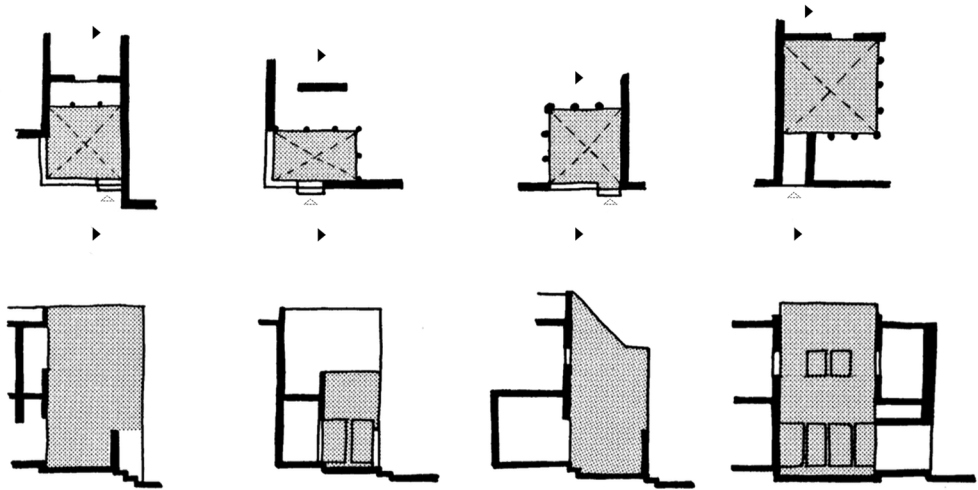
The first classification is that of a **space definer**. A courtyard which is roughly the size of a small living room with a privacy only limited to the immediate family can be categorised as a definer. Functionally it is more of an extension of domestic space combined with a source for light and ventilation.

The second classification is of an **articulator**. When a court for daylight and ventilation, almost becomes a private extension of the domestic space of one family, it can be qualified as an articulator. It has a lockable and a clearly defined threshold, however is much larger in size than the definer type. This more private type of the courtyard is seen most commonly in traditional Muslim homes, as a space where the women collect and gather, away from the eye of public and visitors collecting in the more public living spaces of a dwelling.

During the site visits, some exceptional cases were also observed. In some cases, the courts were the divider of the house itself and in some as a connector of living and cooking spaces. In more tighter grids, they solely existed as light courts. The third classification comes when the court functions as an entry. The **transitional** courts are usually smaller in scale but grander in ornamentation and are more commonly seen in the Hindu households.

²⁹ Akhtar, Badshah; 1983

COURTS AS TRANSITIONAL SPACE



COURTS IN SPECIAL CASES

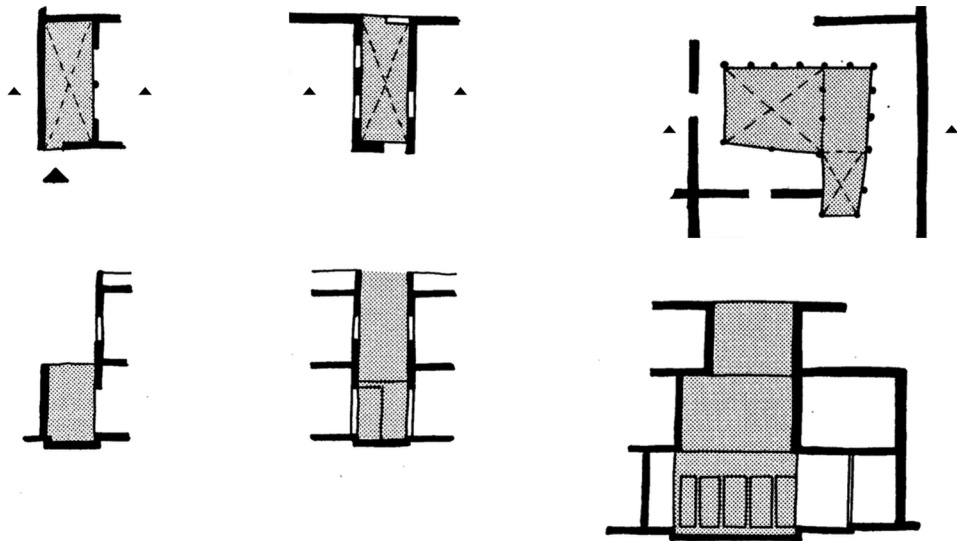


Figure 40. Courtyard diagrams as Transitional spaces and connectors, sketches by Author over Akhtar Badshah's sketches

Reflections and typology creation

There are two intentional processes that explain that chattas had been conceived as a patterned typology marking the territory of the living quarter. Firstly, an easily recognisable architectural articulation of the entry point. Arches or overhead connections change the look and the feel of space, marking territory like a gateway. Furthermore, a single entry point induces interaction between the members of the community, it also makes sure that someone has 'eyes on the street' at all time ensuring the security of the neighbourhood. Defining a territory through a spatial archetype is an intentional act to bring in defence. Secondly, much like the case of chowks, this archetype also utilises the concept of common property to negotiate community participation. Chattas give the opportunities to personalise the open or shared space as per their needs and requirements, attaching the much-needed value to land. The fact that the created resource belongs to one and all and to no one makes it much more resilient and adaptable for community participation.

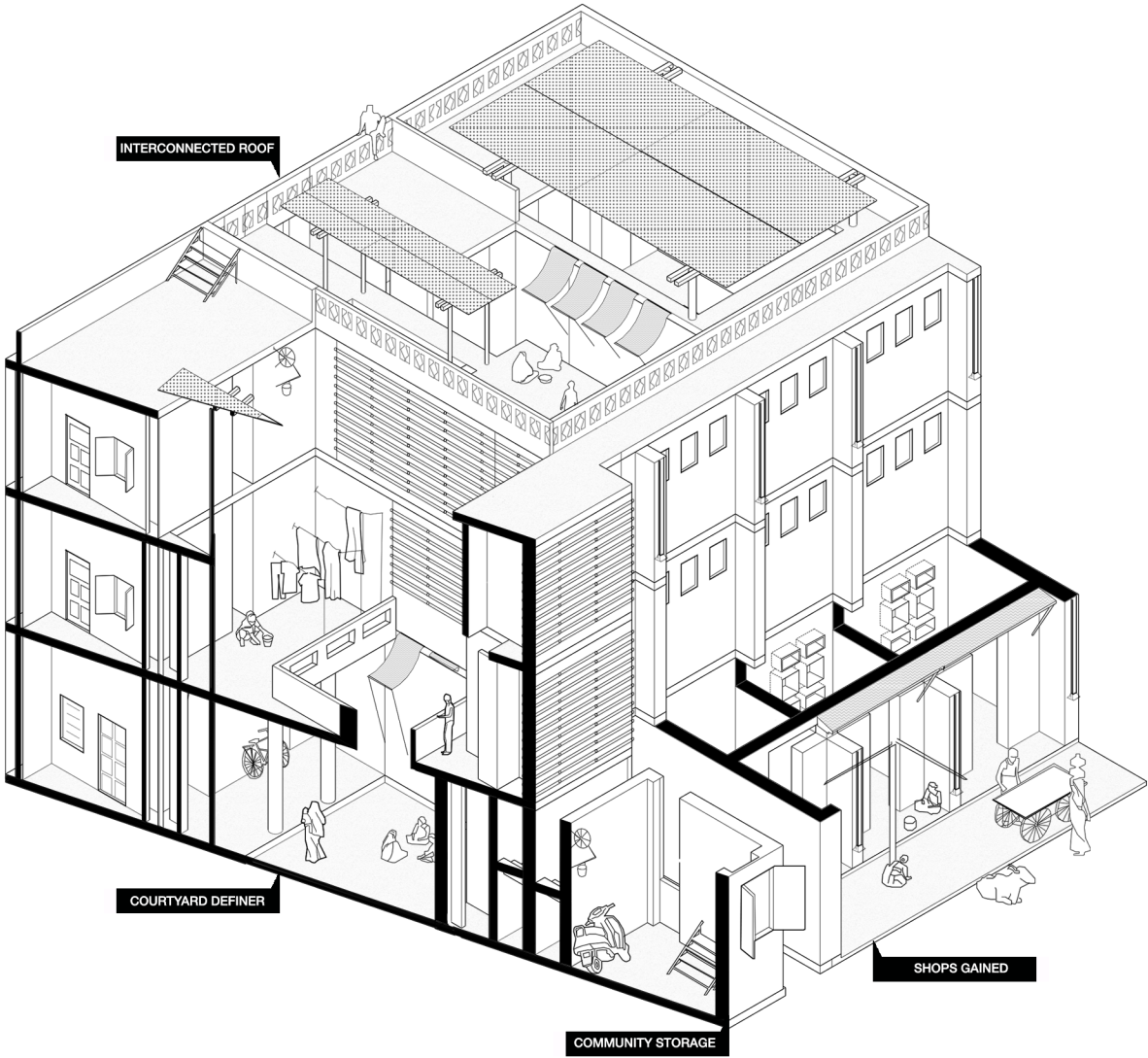


Figure 41. Illustrations by Author



Figure 42. Photograph by Author

E. TERRA INCOGNITA

Reflections and Way forward

While analysing the river edges of the Sabarmati River, De Cunha and Mathur observe that strict boundaries defining the riverfront and the river edge are slowly blurring. They cite an example of a park in the neighbourhood that had a fence, which now has been taken down to invite active participation. He goes on to say that if the lines and boundary definitions are blurring, then there is an urgent need to re-draw a 'new terrain'.³⁰ He terms it as 'Terra incognita' or a terrain of unmapped and unknown. This research paper is an attempt to engage with a 'terra incognita', that is the realm of open space in the informal settlements of Delhi.

When britishers started mapping the landscape of India, an unfamiliar context they could only map the legible. Through gazetteers, maps and drawings they semantically reduced the Indian landscape to something simple and ordered. However, informal settlements in Delhi, actively resisted this change and survived both in numbers and form. Post-Independence, the governmental agencies made several attempts to organise the settlements and on being not able to successfully do it, marked them into red boundaries called 'laal Doras' or Red threads. The zones inside the red threads were exempted of government policies of ordering and have now been relegated to slums. Just because these settlements do not fit the brief of an order in our disciplinary perception, does not mean they are not ordered. This paper argues that these settlements are ordered, ordered by complexity.

Underneath the seemingly chaotic terrain of open space, there is a latent logic or pattern. To observe and make sense of it the viewing lens had to be changed and in this case it was provided by overlapping Holland and Page's theory of complex adaptive system along with Ostrom's common property regime, over the local knowledge gained by author's continuous engagement with the settlements. Economically arguing, holding gatherings and activities with large crowds becomes imperative for the poor. In a terrain where land is the biggest resource, poor quietly encroach and appropriate city margins that are redundant for the real estate. They spread in unviable length and on unviable widths linearly so as to defend any sort of resistance from the ordering agencies. This linear terrain is identified as Maidan (equivalent to urban parks) – a large space that is always in flux and changing forms, maintaining the historical centre at its core.

Furthermore, inhabitations and settlements have always developed around resources. Informal settlements have either grown the same way or have developed their own so as to stand ground for centuries. In an environment, where the user groups cannot afford to harvest resources individually, they mobilise in communities to share resources for a common gain. The next terrain of 'Chowks' (equivalent to squares) is found to be a spatial articulation of these points of resources. The communities in the sample studies have over the years of socio-spatial restructuring developed loops and connections of these resource points, resulting in a loop of chowks, that in turn redistributes the grain of the settlement. The chowks

30 De Cunha and Mathur 2017

are usually rectangular with a minimum of three entrances. They have a connection to nearest public space so as to sell or showcase the harvest visibly.

It was observed that social network is key in constructing neighbourhoods and communities. The migrants feel secure while placing next to someone known and hence, the communities are observed growing along familial, religious or economic affiliations. The open-space structure of 'Chatta' plugs in at this point becoming the public-private. Communities customise these spaces with spatial definitions and programs key to their values – temples or wrestling rinks. Every member participates in organising it and thus this space belongs to everyone and no one at the same time. The 'chatta' has an architectural threshold and a single entry, which has a seating space where people collect. So by the time a stranger reaches the interiors of the community, people are already aware of his/her presence. It usually has a shape of a square or a distorted square and shows a gradation of privacy as per the placement within the neighbourhood.

Such idiosyncrasies in the non-designed environment add value to the settlement shaping the user interactions. The paper concludes that the open spaces in a non-designed environment are formulated by social forces especially economics, religion and defence. The physical forces would also play a role, however, only over a radically changing terrain. The interplay of physical forces in isolation and along with social forces can be a point of future exploration.

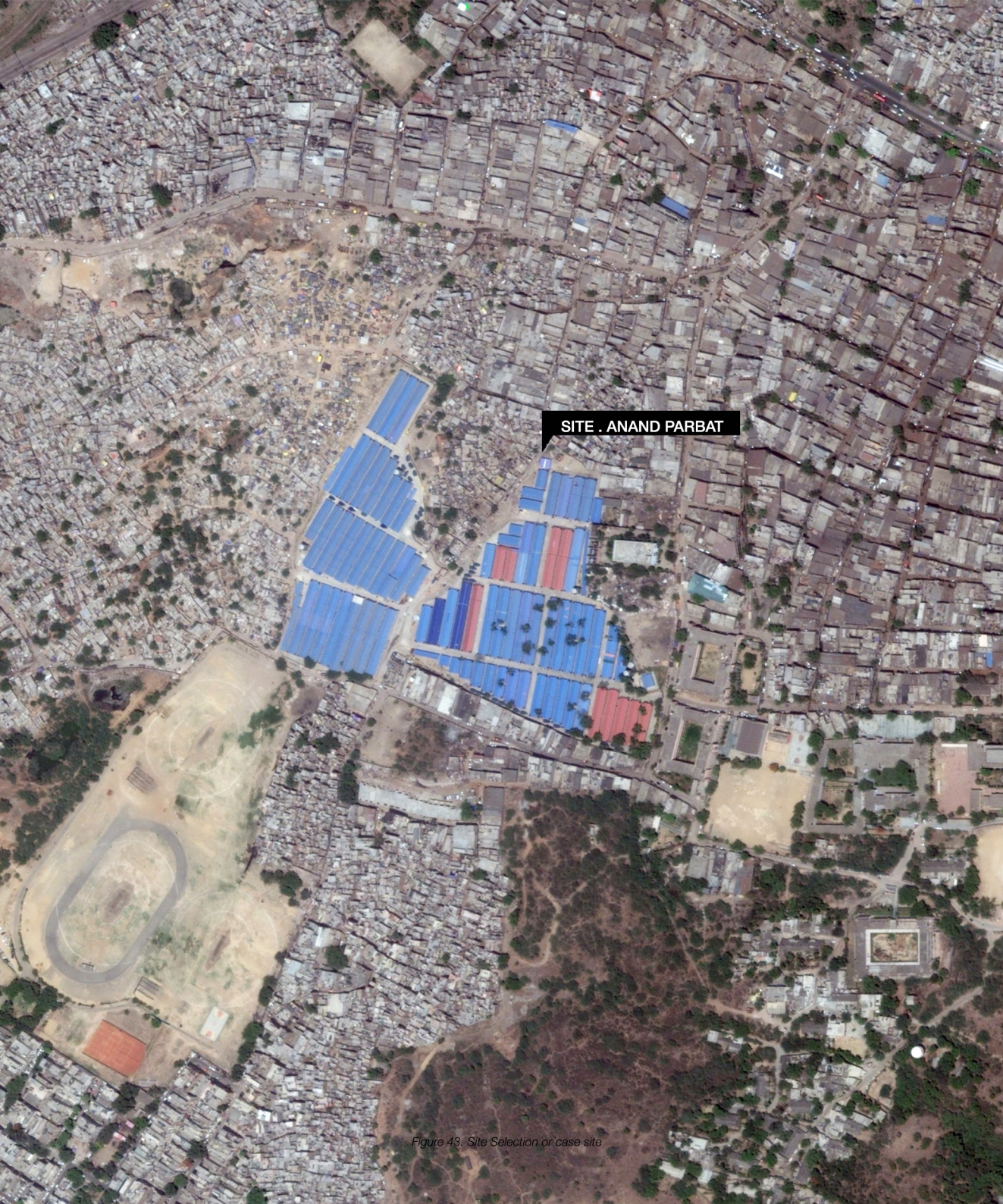
Despite of clear intentions, most design attempts have been unable to gauge the 'ordered complexity in the open spaces, which this paper argues should have been at the core of design processes. Partly by being always outside the system and partly rejecting the intelligence in nature, designers have not been able to effectively use the learnings into formalization processes. The paper attempts to make a case for these forces and spontaneous orders which are not always positive but are arguably genius.

F. TRANSLATION TO DESIGN

Work in Progress

Design

Chosen for their **geographic strength** Pre-Transit camps are reimagined as a **dwelling prototype** challenging the existing in which poor are housed and displaced as cattle. It is envisioned as an **inclusive neighbourhood** exposing the poor to socially and physically **resonant inhabitation forms,** empowering and stabilizing them to either build up **capacity or assimilate** back into the city before the final displacement.



SITE . ANAND PARBAT

Figure 43. Site Selection of case site

Step 1

CONTEXTUALISE

Anchor to the site



Figure 45 . Site structuration schem

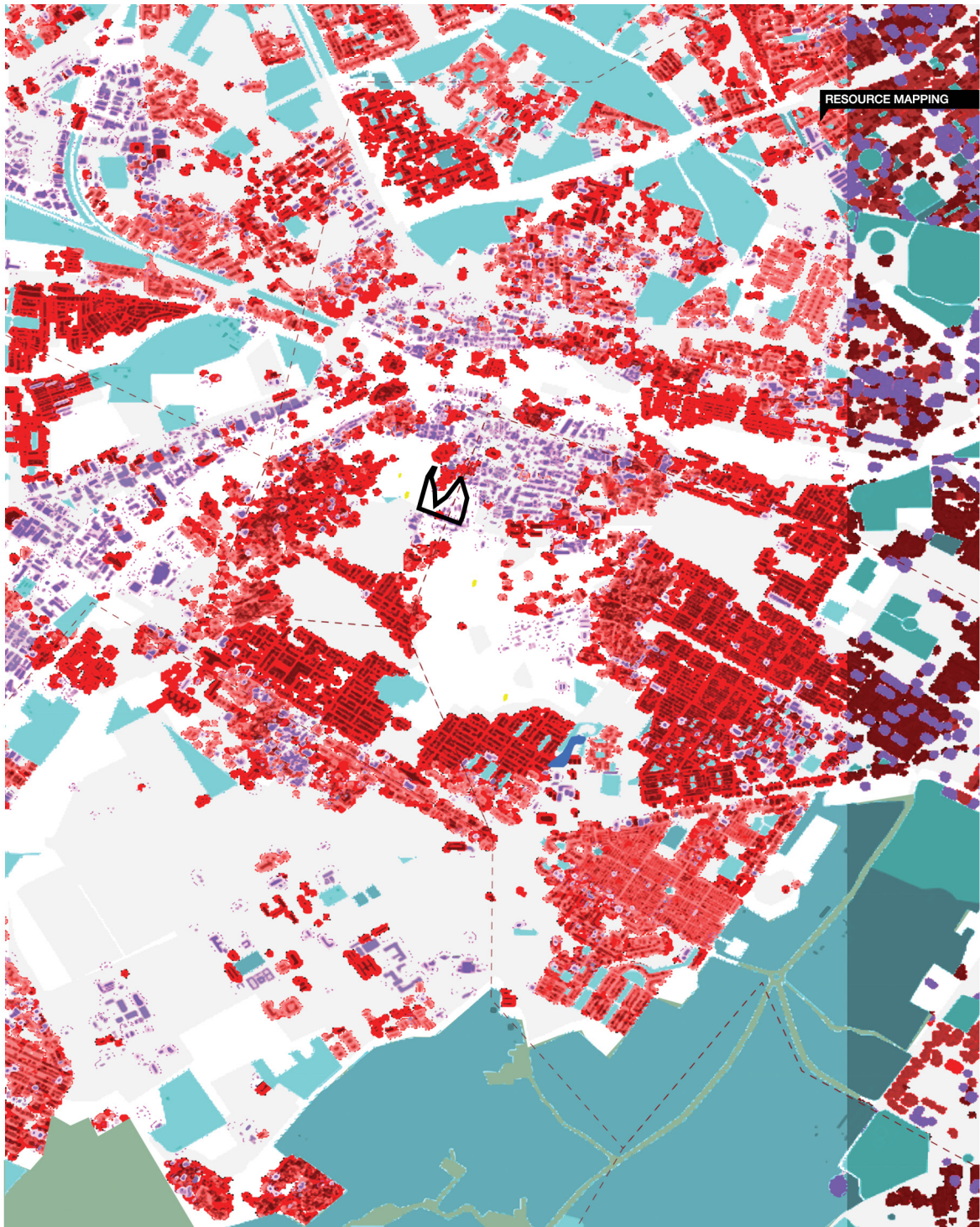


Step 2

RESOURCE-IZE

Using GIS to identify resources of water and fertile soil for creating resource pools. Ostrom's resource theory applied for primary neighbourhood creations







RESOURCE POINTS . N |



Figure 46 . Site structuration scheme f



CONNECTING POINTS . N |



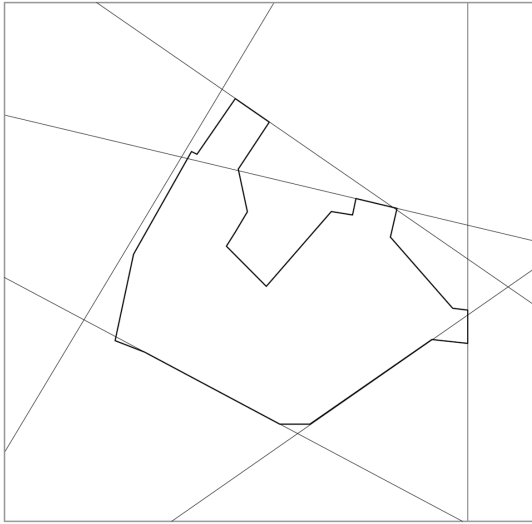
CONCEPTUAL SKETCH. 2 |

Step 3

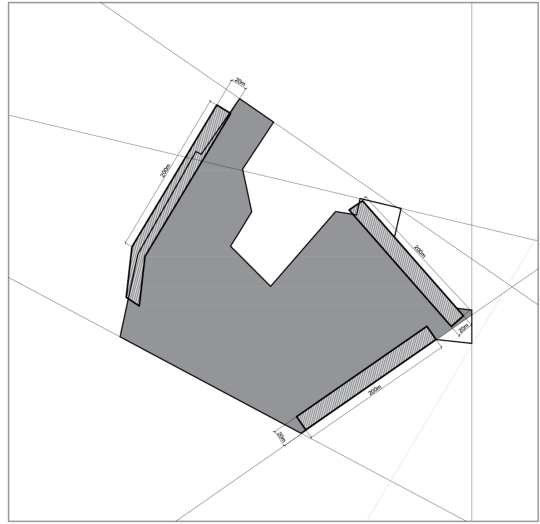
TYPLOG-IZE

Making the process non-discursive

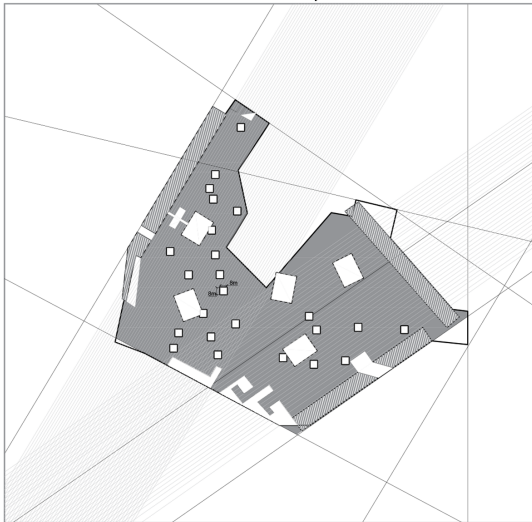
SITE LINES . Scale 7500 . N |



LINEAR MAIDANS . Scale 7500 . N |



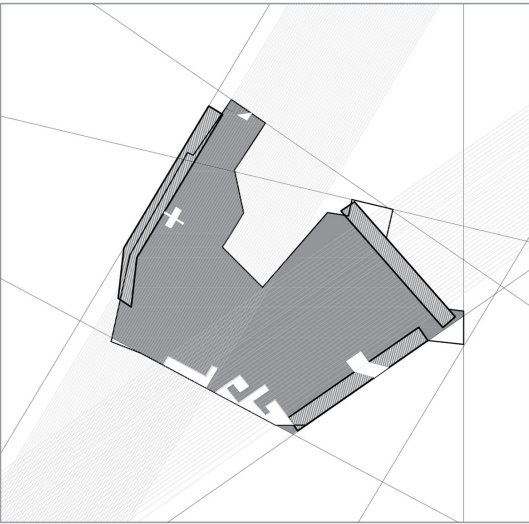
RESOURCE POINTS . Scale 7500 . N |



RESOURCE LOOP . Scale 7500 . N |



CONTEXTUALISE . Scale 7500 . N |



CHOWK LOOP A . Scale 7500 . N |



STREET NETWORK . Scale 7500 . N |



FINAL GRAIN . Scale 7500 . N |



Step 4

RATIONALIZE

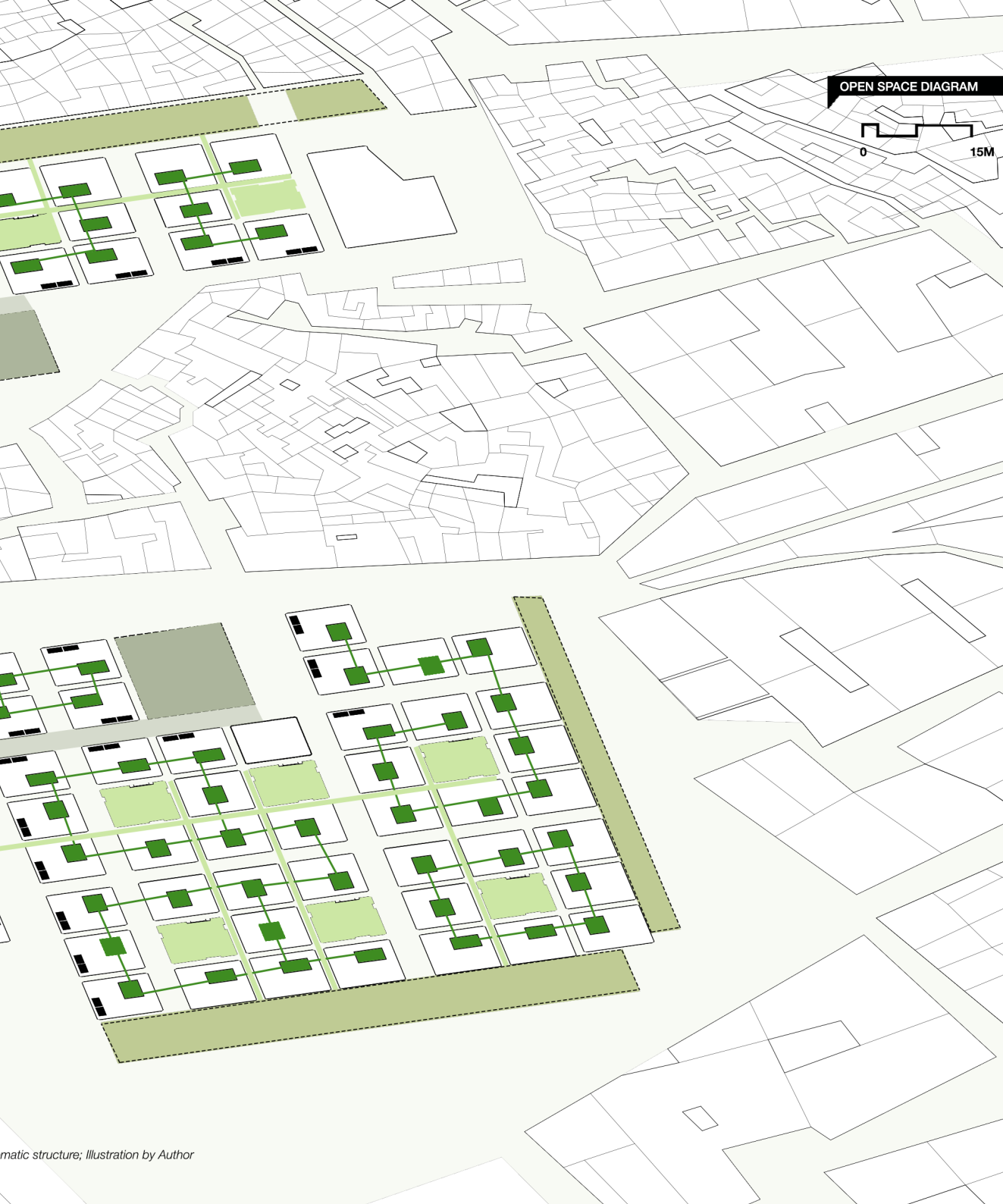
Zooming into scales



- LINEAR MAIDANS OR URBAN PARKS
- NETWORK OF CHOWKS OR SQUARES
- INTERCONNECTED COMMUNITY PLAYGROUNDS
- NETWORK OF CHATTAS OR COURTYARDS

Figure 48 . Open space diagram from Anand Parbat, Scheer

OPEN SPACE DIAGRAM



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