Nirmiti Sanjay Sutar

KOLHAPUR AND ROME
A STUDY OF THEIR URBAN MORPHOLOGIES AND BASE BUILDINGS, AND UNDERSTANDING THE CONNECTIONS BETWEEN BOTH

Abstract

The study of Urban Morphology has helped us understand the evolution of cities, to better analyse the substrata and build guidelines for urban development. In 1945, there was an excavation carried out in the city of Kolhapur on the mound of Brahmapuri; an oldest settlement of the city. In the excavation report published by history professors H.D. Sankalia and Dr. M. G. Dikshit of Deccan College Pune, it says, traces of a Roman trader's brick house have been found along with some interesting objects, which dates back to 2nd century BC. Dr. Wheeler, the then Director General of Archaeology in India expressed the hope that the city of Kolhapur might turn out to be a key site for understanding the spread and depth of Roman influence on Indian culture of Satavahan period. The aim of this paper is to firstly; understand the Indo-Roman relations with the help of excavation evidences, secondly; study the morphological evolution of both the cities – Rome and Kolhapur and thirdly; an attempt to resolve the base building module for the city of Kolhapur with the help of Gianfranco Caniggia's approach of interpreting basic buildings which is also the method of study in this paper. Findings – Using critical consciousness in order to study the spontaneous consciousness of man in different periods irrespective of the cultural differences shows us strikingly similar evolution of urban form in the two cities herewith studied which is evidently backed up with the analysis of aggregation of urban tissues.

Keywords: Urban morphology, Aggregation, Base building**,** Architecture History, Urban form.

KOLHAPUR I RZYM
STUDIUM MORFOLOGII MIEJSKIEJ I PODSTAWOWYCH BUDYNKÓW, A TAKŻE ZROZUMIENIE POWIĄZAŃ MIĘDZY NIMI

Streszczenie

Badania nad morfologią miejską pomogły zrozumieć ewolucję miast oraz pozwoliły lepiej analizować podłoże i tworzyć wytyczne dla rozwoju urbanistycznego. W 1945 roku w mieście Kolhapur przeprowadzono wykopaliska na kopcu Brahmapuri, najstarszej części miasta. W raporcie z wykopalisk, opublikowanym przez profesorów historii H.D. Sankalia i dr. M.G. Dikshit z Deccan College w Pune napisa-

no, że znaleziono ślady murowanego domu rzymskiego kupca oraz kilka interesujących przedmiotów, które pochodzą z II wieku p.n.e. Dr Wheeler, ówczesny dyrektor generalny ds. archeologii w Indiach, wyraził nadzieję, że miasto Kolhapur może okazać się kluczowym miejscem dla zrozumienia rozprzestrzeniania się i głębokości wpływów rzymskich na kulturę indyjską okresu satawizmu. Celem niniejszego artykułu jest, po pierwsze, zrozumienie relacji indo-rzymskich z pomocą dowodów wykopaliskowych, po drugie, zbadanie ewolucji morfologicznej obu miast – Rzymu i Kolhapur, a po trzecie, próba rozwiązania modułu podstawowego budynku dla miasta Kolhapur z pomocą podejścia Gianfranco Caniggia do interpretacji budynków podstawowych, która jest również metodą badawczą w tym artykule.Wykorzystanie świadomości krytycznej, w celu zbadania spontanicznej świadomości człowieka w różnych okresach, niezależnie od różnic kulturowych, pokazuje nam uderzająco podobną ewolucję formy urbanistycznej w dwóch analizowanych miastach, co jest ewidentnie poparte analizą agregacji tkanki miejskiej.

Słowa kluczowe: morfologia urbanistyczna, agregacja, budownictwo bazowe, historia architektury, forma urbanistyczna.

Introduction

Rethinking the notion of limits for a place is like return of conception of Aristotle where studying the notion-less limit that embraces the body against modern sense of place, a relationship of one body with others became significant. The 'Urban crises' in terms of spaces and individualised design practices could be addressed to the sprawl of urban fabric and its substrata that has been nourished and malnourished due to a number of reasons which include socio-economic, political, cultural, etc. since the beginning of civilisation.

One of the fundamental end products of this process at its base is 'the building'. At present, building is characterized by a major discontinuity of products and intentions which lead to urban aggregates consisting of highly personalised, scarcely related objects[1]. It reflects complete individualism and unawareness of contributing towards a global picture. One way or the other, the lack of connection of the building to the morphological substrata whatsoever accounts to be the major reasons of the Urban crises. This does not have to imply that the building needs to fulfil a concept or form aesthetical relations to the respective historical forms of architecture, which can be a point of argument for the celebrated modern exoticisms in architecture and urban design. However, if a building is 'anonymous' it has neither history nor the possibility of being understood today[2]. Due to the conventional impermanent permanency of built buildings, it is highly impossible to reverse the scenario and go back to the basics of contextual substratum and reconstruct, respecting the evolved form by keeping aside the modern exoticisms. This deliberate uncertainty flips the 'spontaneous

[1] Caniggia G., Maffei G.L., *Interpreting Basic Buildings,* Rome 2017, pp. 31.
[2] Ibidem, p. 37.

consciousness' to 'critical consciousness' amongst designers and end users. They keep following the momentum blindly and a small critically conscious move leads to uncontrolled gargantuan crisis. Right here comes the need to analyse the pattern of crisis and the evolution of the urban morphology to determine the form of the base building.

According to Gianfranco Caniggia, 'Spontaneous consciousness' means in particular, the attitude of individuals adapting, in their work, to their inherited civil substance, without needing or requiring mediations or choices[3]. It describes the attitude of any human being when acting without thinking twice, the moment in which they let themselves go. Whereas, 'critical consciousness' is when the human beings have to deliberate because they have no firmly established way of acting.

The effort of this paper would be towards understanding the approach methodology of deriving base building forms and their evolution in the city of Kolhapur with the help of that practiced and researched by Gianfranco Caniggia, an architect born in Rome who produced immaculate work in revealing the urban morphology of Rome. This could be achieved by focusing our critical consciousness on those of the spontaneous moves or design decisions carried out before. Studying the Urban form of the city (Kolhapur) parallel to that of Rome; does not have to be critically similar but finding a key to the root of its sprawl for better understanding the evolution. This would not just help conceive the seeds to different urban solutions to the crises but could also help develop a guideline for the new infrastructural development or even to the point as to when and where can we construct a brick wall.

Methodology – The methodology of this research is based on understanding and using Gianfranco Caniggia's method of aggregation to synthesize the urban tissues in a city. For analysing the morphological evolution in case of Rome, aid of historical maps drawn under the program 'Studi per una operante storia urbana di Roma' has been taken followed by a case study of Jewish ghetto; an urban tissue of Rome. Similarly, for the city of Kolhapur, the evolution has been studied with the help of historical evidences of diachronic changes in the fabric, mapped with the help of Cadastral data followed by a case study of an urban tissue.

1. The key of parallelism and relative history of Rome and Kolhapur

1.1. Introduction

By the end of first century B.C., there was a great expansion of international trade involving a contiguous power; the Roman Empire[4]. Although theories that

[3] Ibidem, pp. 39–40.

[4] Department of Ancient Near Eastern Art. Trade between the Romans and the Empires of Asia. In *Heilbrunn Timeline of Art History*. New York: The Metropolitan Museum of Art, 2000.

attempt to explain ancient urbanism by a single factor, such as economic benefit through trade, fail to capture the range of variation documented by archaeologists where excavations at early urban sites show that some cities were sparsely populated capitals, others were trade centres and still other cities had a primary religious focus[5]. Ergo, my hypothesis says that along with trade and custom exchange there must have been an exchange in ideas of civilization and building cities that have suitable similar conditions of origination and growth. For instance, here in our cases of cities Rome and Kolhapur, both have a strong connection to their mother rivers in terms of planned and unplanned growth of settlement fragments of the urban fabric. The rivers in both the cities act as the source of life in urban organisms that have evolved and are throbbing. Rome in fact is semi monocentric and semi polycentric, half-enclosed by the loop of the Tiber River, half condensed around small centres scattered throughout its large enclosed territory, and on the other hand, Kolhapur bulges around the river hook forming the earliest settlement of Brahmapuri civilization from where the city formulates its fabric. Devising similar civilizational habitation does not necessarily mean that there could have been an exchange in information for city planning in the same time frame as the cities evolved, but understanding the time fragments and the respective development in the urban fabrics of each city can help analyse the evolution of substrata and base modules. Moreover, the formerly developed civilization of the city of Rome and the methodological approach for studying the patterns can be used for the city of Kolhapur on the basis of its meagre yet significant connections given that the observed traces of patterns are similar.

1.2. The Indo – Roman trade route and its direct correlations

Having known that the Indo roman trade route is a vast topic and has its roots with the classic Greek influence over major parts of cultural significance in India, the city Kolhapur stands out to be one of the few centres of trade and culture exchange in western part of India, as mentioned by Greek Ptolemy as 'Hippokoura' the capital of Balaekourus. The Greek contact with India left certain notable bequests, the nature and extent of which were, however, exaggerated in the early days of Indological studies[6]. It is now clear that the classical influence touched mainly, the organized urban and monastic life and left major cultural pattern of India comparatively unaffected. Brahmapuri civilization through which the city Kolhapur flourished and developed is one of those significant cultural and urban centres, which are known to be planned properly (fig. no. 03). According to the excavations report at Brahmapuri in 1945 by H.D. Sankalia and M.G. Dikshit, the beginnings of the city of Kolhapur may go back to circa 200 B.C. or earlier. It is however, from second century A.D. that there is firm

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http://www.metmuseum.org/toah/hd/silk/hd_silk.htm. [Access: 20.02.2022].

[5] https://courses.lumenlearning.com/boundless-sociology/chapter/urbanization-and-the-development-of-cities/ [Access 22.02.2022].

[6] Sharma Y. D., *Exploration of historical sites*, 1953, pp. 117, 163.

evidence of flourishing brick built houses and articles of common use such as coins, beads, bangles and iron implements. Roman contact is further confirmed by a bronze vessel and clay bullae made in imitation of Roman prototypes[7] (fig. no 02). Moreover, the unique trade relations of the Brahmapuri civilization with that of the Yemen and its craft work relating to bangles is astonishing as vernacularly manufactured glass bangles had been found in the excavations from the Bahamian, which was during 14th to 17th centuries[8]. A paper on glass bangles of Al-Shihr, Hadramawt explains the uniqueness of the trade potential of Brahmapuri civilization and in turn the Kolhapur city (fig. no. 04).

Fig. No. 1. Items made in imitation of Roman prototypes.

Dish with figures (perhaps Eros &Psyche), Poseidon (Graeco Roman God of the sea), Trefoil mouthed Jug with a handle.

Source: Excavation report of Brahmapuri Dr. Sankalia; Sankalia H.D. and Dikshit M.G, op.cit., no. 33.

[7] Sankalia H.D. and Dikshit M.G., *Excavations at Brahmapuri*, 1945 p.7.
[8] Stéphanie B., Claire H., *Glass bangles of al-Shiḥr, Ḥaḍramawt (fourteenth-nineteenth centuries), a corpus of new data for the understanding of glass bangle manufacture in Yemen*, „Archaeopress", 2010, vol. 40, p. 136.

Fig. no. 2. Ancient cultural and urban centres in India.

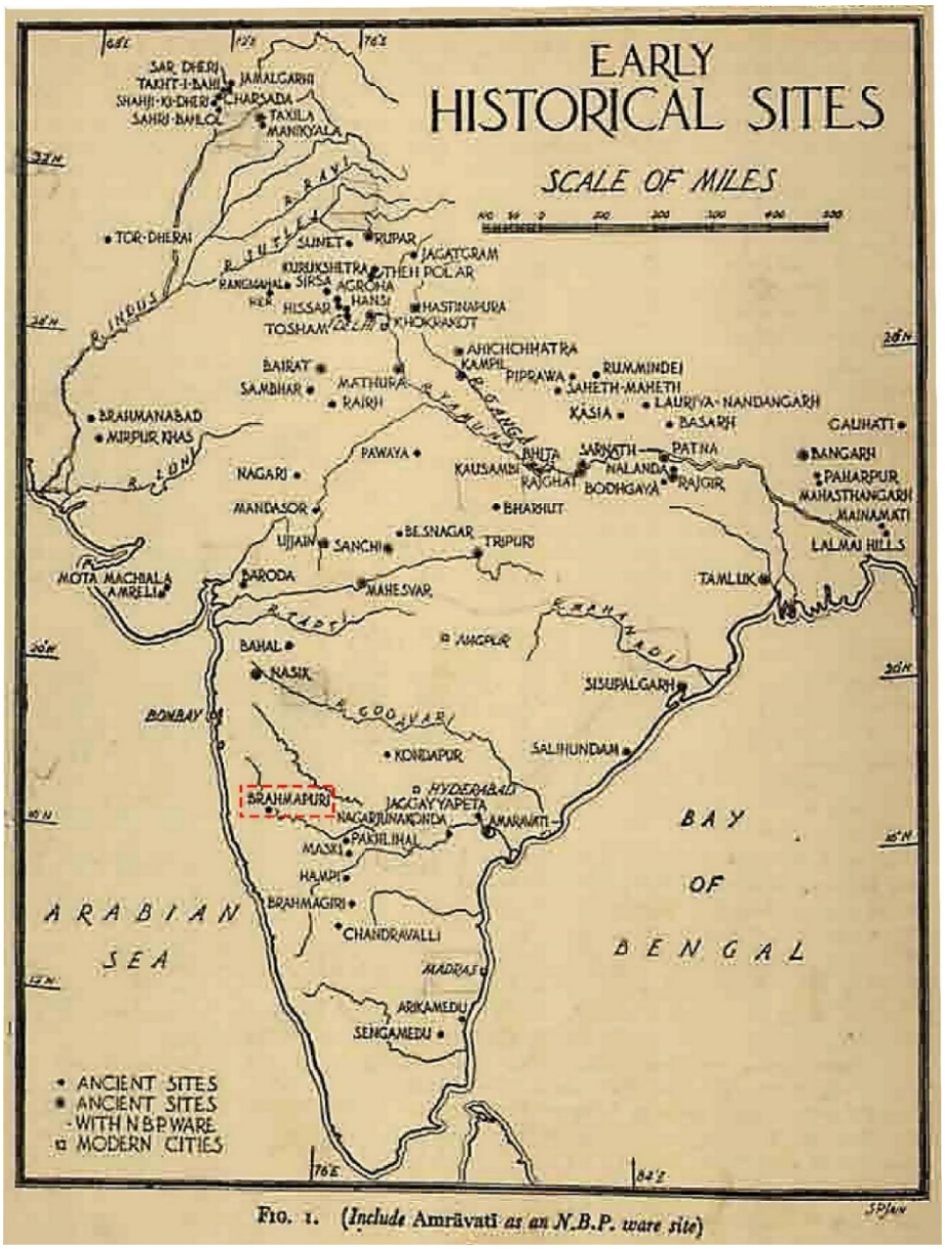
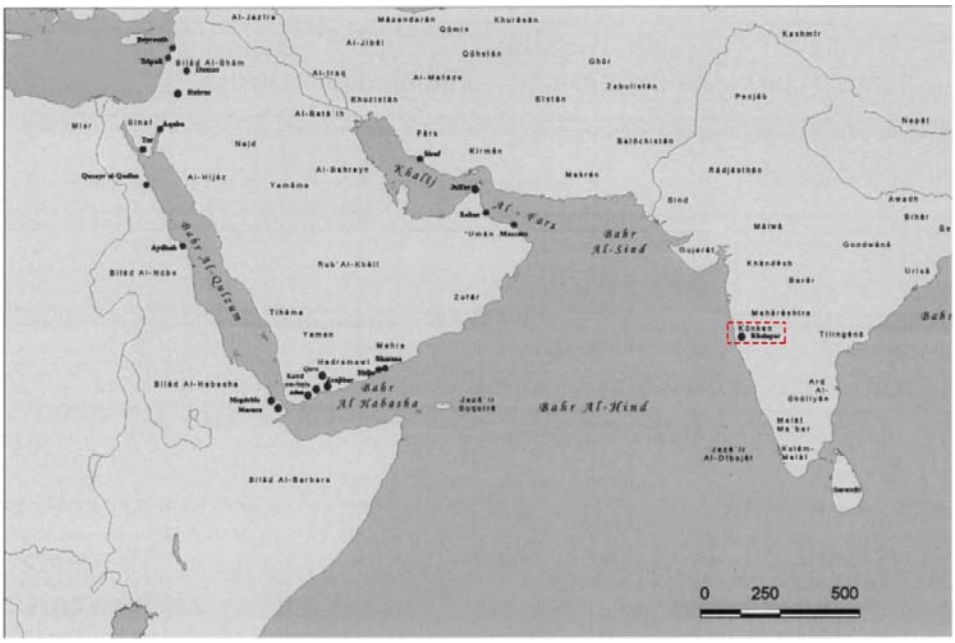


FIG. 1. (*Include Amrāvati as an N.B.P. ware site*)

Source: Sharma Y. D., *Exploration of historical sites,* 1953, p. 118.

Fig. no. 3. Location of Al-Shihr**.**



Source: Stéphanie B., Claire H., *Glass bangles of al-Shiḥr, Ḥaḍramawt (fourteenth-nineteenth centuries), a corpus of new data for the understanding of glass bangle manufacture in Yemen*, ,,Archaeopress", 2010, vol. 40, p. 136.

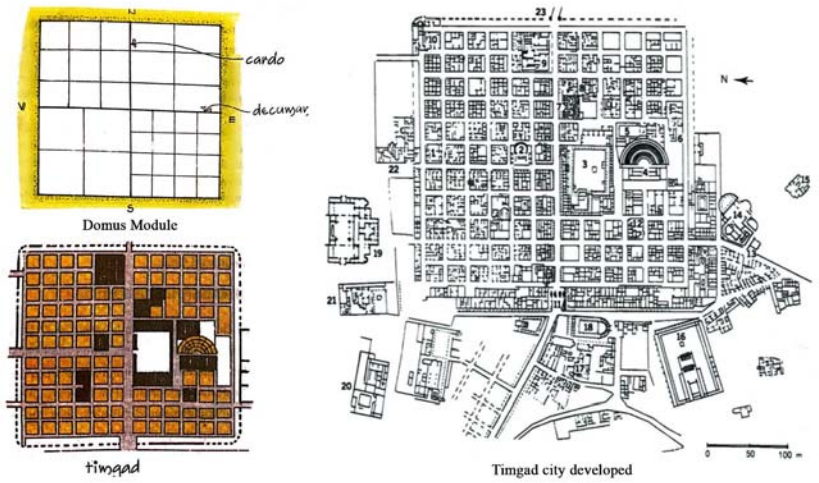
1.3. Ancient city planning practices in Roman and Indian civilizations

During the inauguration of the New York chapter of the American Society of Architectural Historians on April 13th, 1943; Dr. Lehmann Hartleben mentioned during the paper presentation on 'Impact of ancient city planning' about Thomas Jefferson and his efforts towards understanding city planning. The paper was an unconscious analogy resulting from general parallelism of approach to learn impacts of the ancient city planning and their relations. Amongst the city plans studied by Thomas Jefferson, particularly in European context, was one Greek and eight Roman. It mainly focused on how city planning is an unbroken tradition form antiquity consciously and unconsciously conditioned the concepts of the later world. Although Roman civilization has a direct influence of Greek traditions and culture, one can practically rule out these direct influences in city planning because Greeks had developed the city planning five centuries before Christ and had expanded during the Hellenistic age. Therefore, Rome reworked and adapted the city planning of Greeks by four centuries of transformations developing the 'checkerboard system'[9].

[9] Lehmann-Hartleben K., *The impact of ancient city planning on European architecture*, 1943, pp. 21–23.

Considering the parallelism in the centuries and their work in terms of city planning and major advancements, it is quiet intriguing to study the patterns evolved. The term checkerboard system adapts well with otherwise difficult to relate eastern and western civilizations. The Centuratio system of Roman city planning was the one dominated by a skeleton of main streets crossing each other at exact center (fig. 04) and further forming 'domus'[10]. This centralised Roman scheme caused the city to become tight and a definite urban organism, which was complete and comprehensive. According to Scargill, the best examples of Roman planning are to be found, not in Rome itself, which, like Athens, experienced more of organic than planned growth, but in colonial towns like that of Timgad in North Africa[11]. Furthermore, the monumentalisation of the intersections by colonnades or arcades and arches was something that has similar terminologies and appearing in the city planning developed in the Eastern part of the world, particularly talking about Indian ancient cities. During the si-milar century, corresponding to the Greek and Roman period in Europe, the in-creasing faith in Buddhist philosophy laid roots of the Mauryan period where intellectuals like Chanakya studies and wrote Manasara where the city planning in terms of 'checkerboard system' can be observed through patterns such as Prastara, Swastika, Nandyavarta, Sarvatobhadra and Dandaka (fig. 05)[12]. The Jaipur city core was planned based on one of these patterns, Prastara[12]. These thin yet significant evidences influence the further renascence of urban organism formation, which in our case is Rome and Kolhapur.

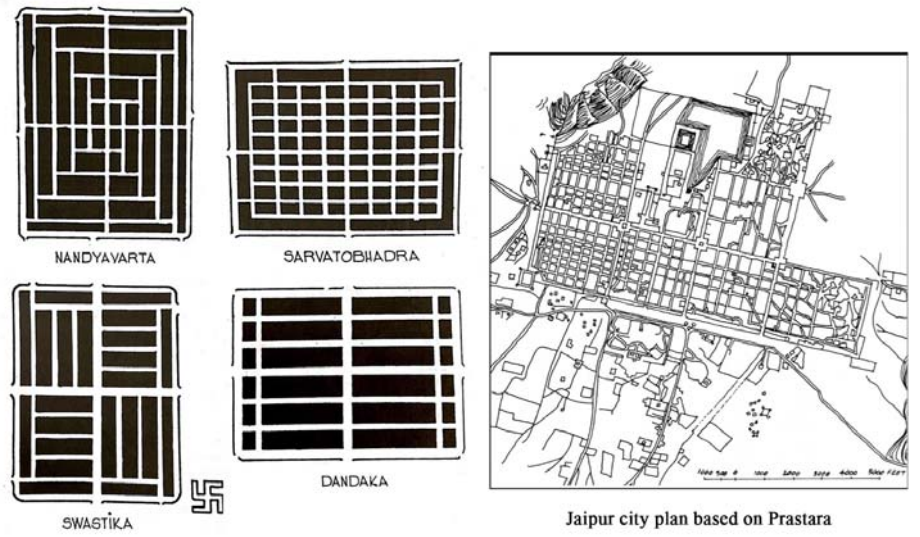
Fig. no. 4. Ancient Roman module of city planning.



Source: Bandopadhyay A., *Textbook of town Planning*, 2000, p 13.
Grimal P., *Roman Cities*, The University of Wisconsin Press, Wisconsin 1983, p 13.

[10] Bandopadhyay A., *Textbook of town Planning*, 2000, pp. 20–25.
[11] Scargill, DI, *The form of cities,* London 1979, p. 146.
[12] https://www.archinomy.com/case-studies/jaipur-evolution-of-an-indian-city [Access: 04.05.2022].

Fig. no. 5. Ancient Indian module of city planning in Buddhist period.



Source: Abir Bandopadhyay, *Textbook of town Planning,* 2000, p.p 25–28. https://www.archinomy.com/case-studies/jaipur-evolution-of-an-indian-city [Access: 04.05.2022].

2. Rome as urban organism

Evaluating ancient cities with respect to its urban forms was rather much more an effort into defining what exactly the term 'city' is, which in a nutshell can be studied in Childe 1950 and cf. Herzog researches. In those researches, it has been precisely noted, "The city is a phenomenon which is notoriously difficult to define"[13]. Keeping in mind the diachronic development and topographical variance while summarising the urban growth from antiquity particularly in case of Rome is an important aspect.

According to Gianfranco Caniggia, the towns whose perimeter is retraced several times behave in a specific manner, which in his best case is the city of Florence. Although Rome is a city with a fabric, which has experienced ironically drastic situations even when it was bounded by physical parameters until the late 19th century known as the Aurelian walls[14]. The flow and loops of the river Tiber dating back to 753 BC, have played a major role in shaping the fabric of the city which earlier mentioned in this paper is semi-monocentric and semi-polycentric. This in the later 19th century allowed the city to scatter with small centres throughout the large enclosed territory, which was initially a confined imperial town itself[16].

[13] Gordon Childe V., *The Town Planning Review,* 1950, Vol. 21, No. 1
[14] Caniggia G., Maffei G. L., op.cit., pp. 164.

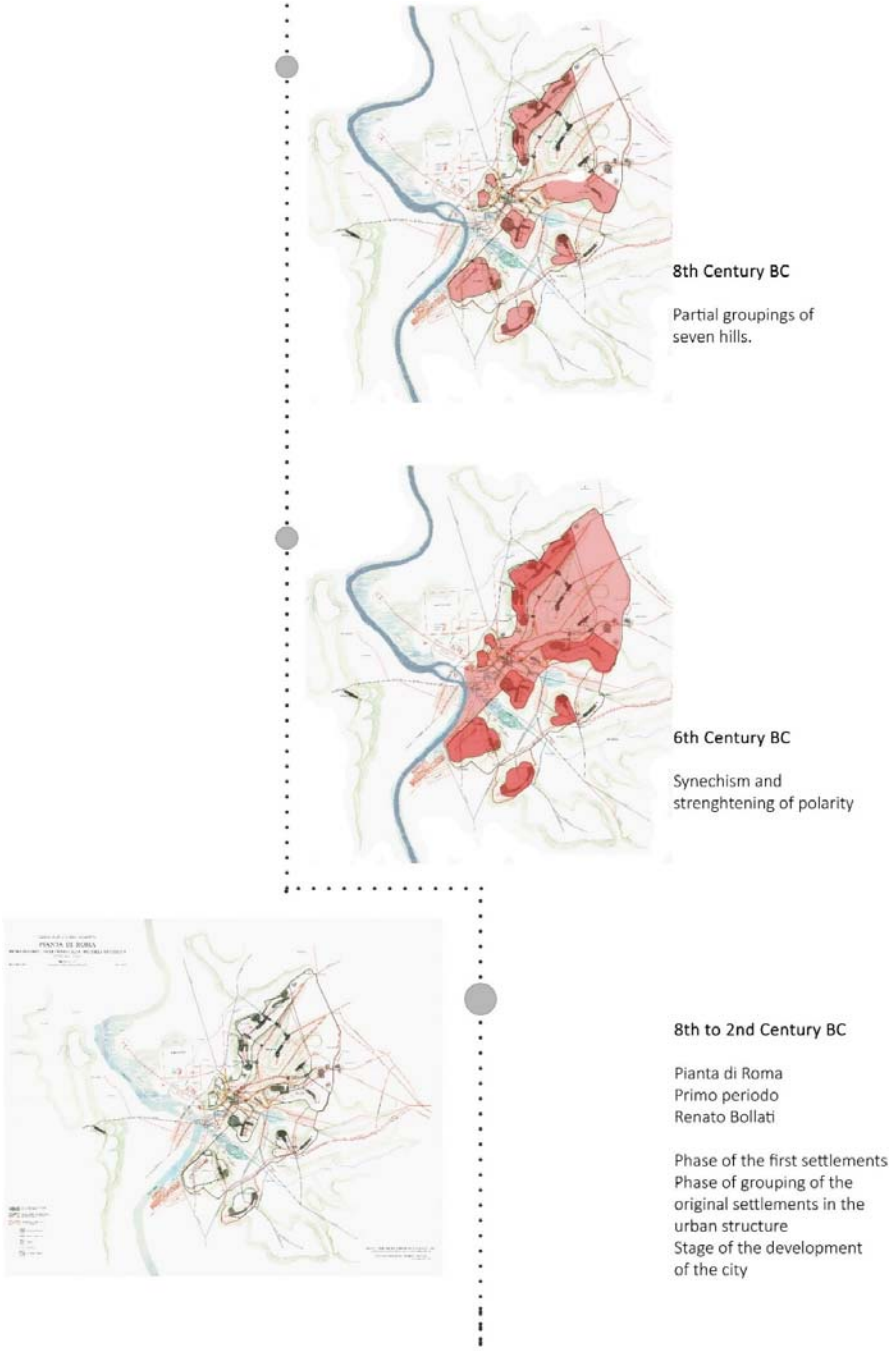
'There is a strong and pleasant memory for hills', mentions Kevin Lynch in his book about city building named 'The image of the city'[15]. The city of Rome is originally formed by small villages on its headlands and thus these can be said to be the 'landmarks' of the city as per Kevin Lynch's principles. These small villages were polarised by their topographical positions when we consider them with the point of reference of the valley floor. Seven hills settlements namely, Capitoline, Quirinal, Viminal, Esquiline, Palatine, Caelian and Aventine formed partial groupings to form a city in 8th century BC. Further, in 6th century BC the synechism and strengthening of its polarity took place when the Roman Forum was established. The 1st century BC saw the expansion of Parade ground and routes leading to Silla's area gradually draining the marshes that it had occupied when its ridge was enclosed with walls connecting the Alban hills. The imperial expansion in 3rd and 4th centuries AD led to its restructuring around the new polarities that were formed in terms of several facility sub-centres such as Baths of Titus and Trajan, Caracalla and Diocletian and some highly specialised plans such as Sessoriani, Lateran, Sallustiani villas and palaces[16].

In the second phase when the collapse of Caesar Augustus Empire happened in 9th century AD, the unified fabric broke up into sub-centres as it was considered to be the most tragic decline of capital of one of the biggest political and civil structures of all times. With the decline in the Empire most of its parts were left abandoned which resulted into coagulation of the fewer inhabitants left. Moreover in 14th and 15th century, the concepts of renewed landscapes were established by rebuilding the Parade ground and connecting the pre-existing centres. The northern hook of the river was recovered and thus became 'seat of a building tissue'. A building tissue which at one end had Capitoline hill as its pole and on another was Ponte Sant' Angelo.

In the latter half of the middle ages, in 16th century, the city experienced the significant modification of Trident plan of Piazza del Popolo, which according to Caniggia, reveals the dialectic relationship between subsequent waves of expansion that occurred in the absence of successive perimeters of Rome. In this case, the first break through axes was traced which redefined the pole as Piazza del Popolo. Further expansion in 19th century by Pope Sixtus V, important routes such as Via Nazionale and the Sistine routes which further enhanced the new expansion of Rome towards the Caelian hill side. Overall, Rome has a law of tissue growth which appears to be habituated by alternating roles of routes that form as anti-nodal and in-turn become nodal in subsequent phase, as quoted by Caniggia vividly, it also continues to expand today in alternating progressive directions; like a star shape[16].

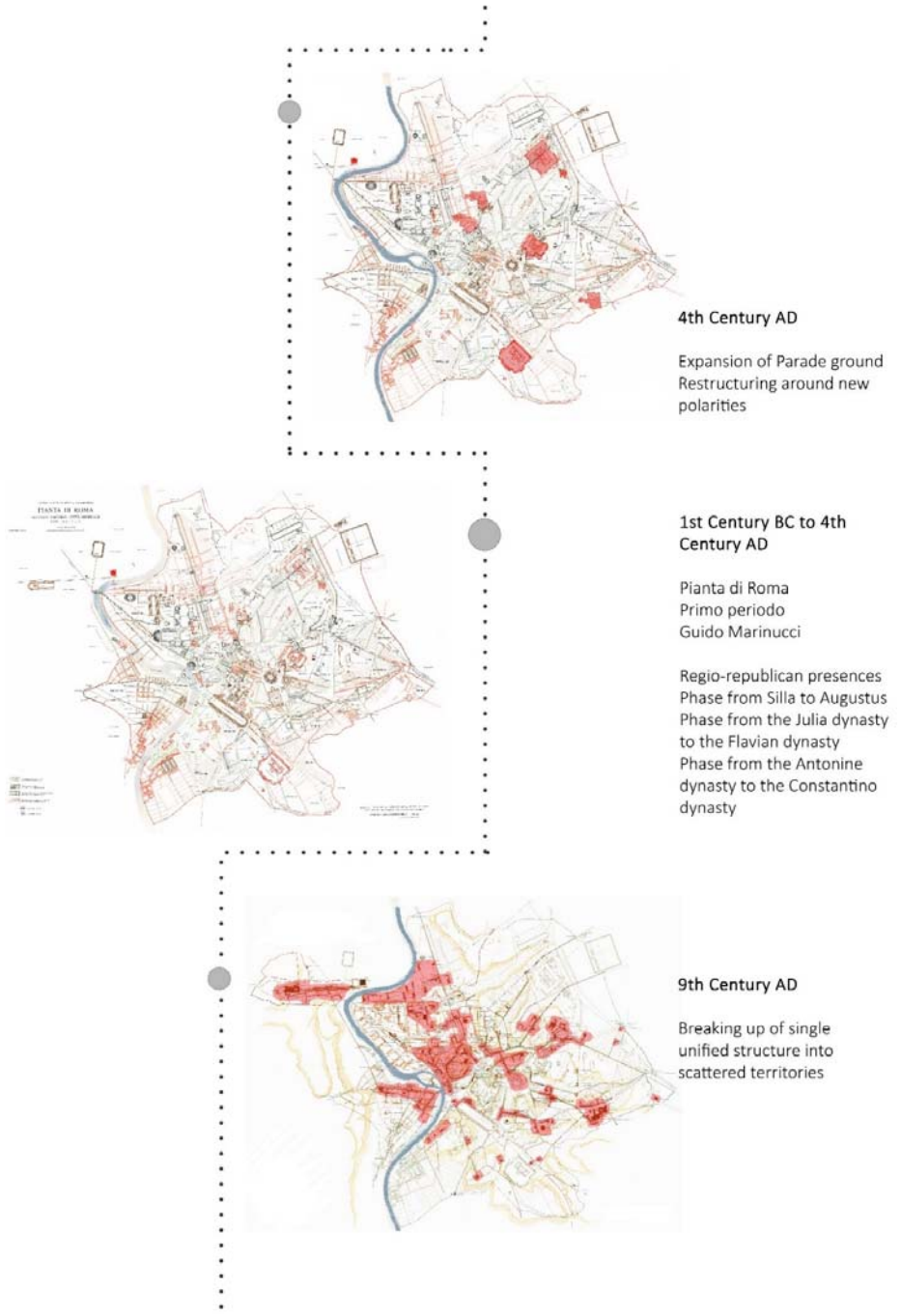
[15] Lynch K., *The image of the city,* 1960.

Fig. no. 6. Evolution of Urban Fabric of Rome.



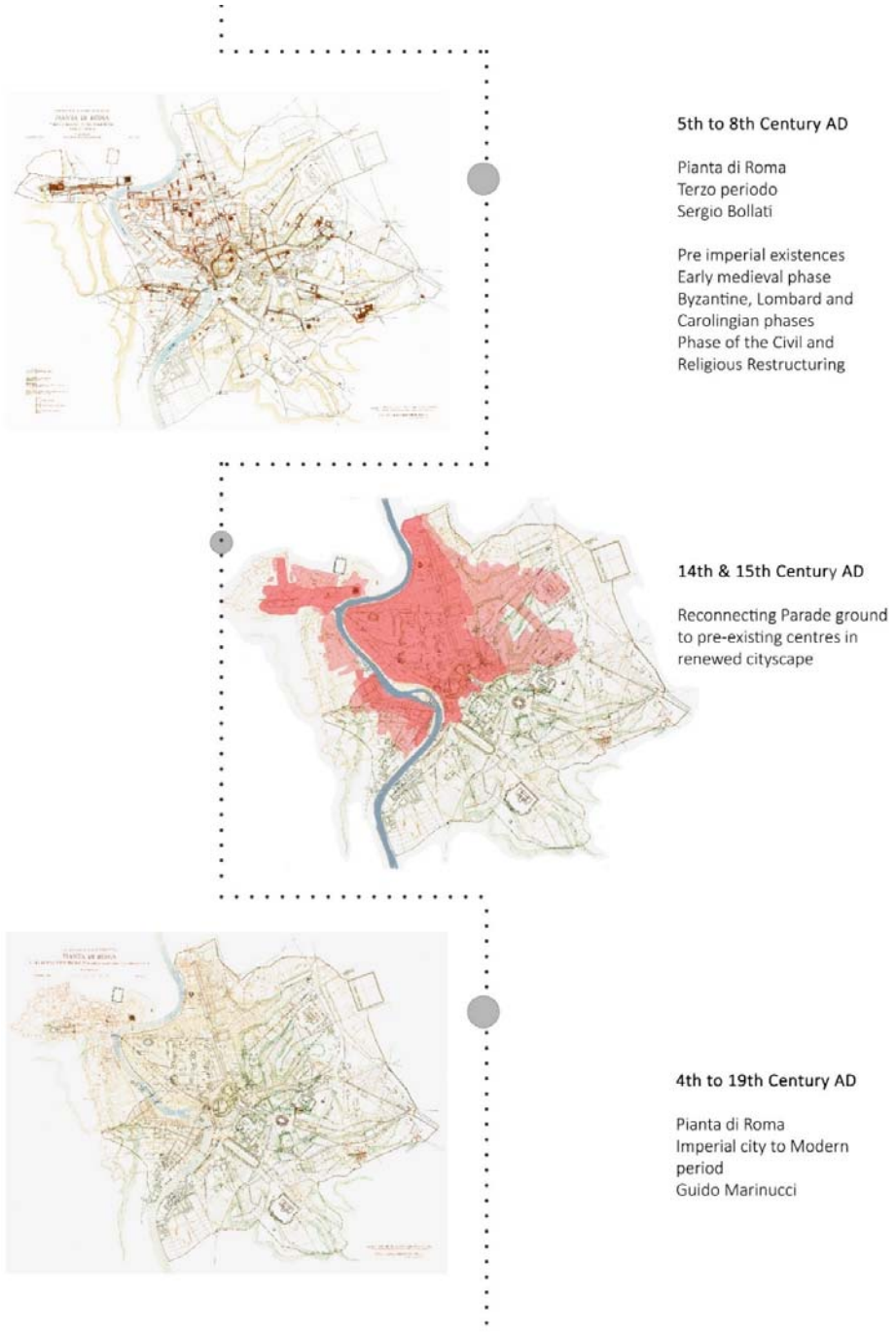
Source: Own study using Renato Bollati, *Studi per una operante storia urbana di Roma*, Roma 1963.

Fig. no. 7. Evolution of Urban Fabric of Rome.



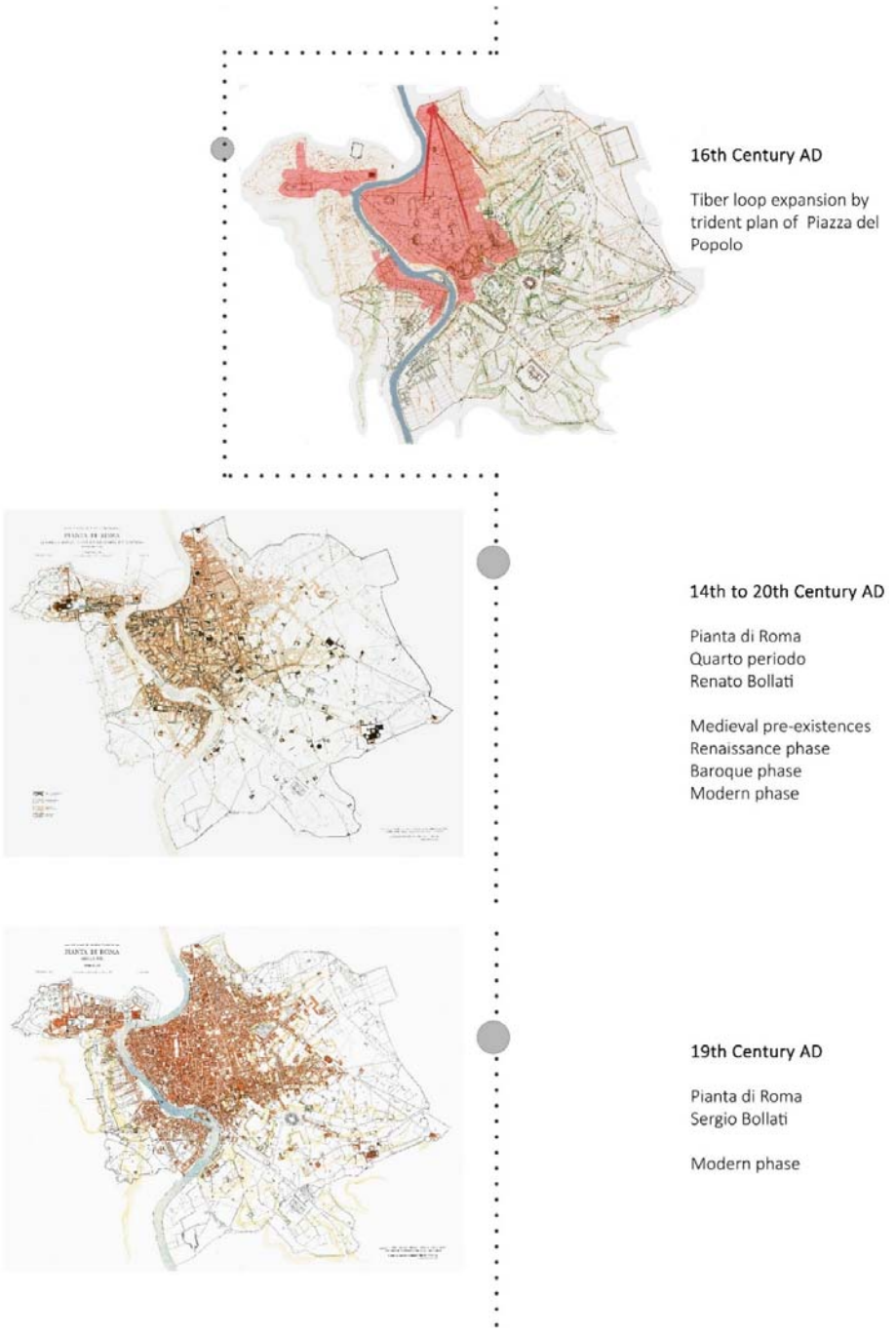
Source: Own study using Giudo Marinucci, *Studi per una operante storia urbana di Roma*, Roma 1963.

Fig. no. 8. Evolution of Urban Fabric of Rome.



Source: Own study using: Sergio Bollati, *Studi per una operante storia urbana di Roma,* Roma 1963.

Fig. no. 9. Evolution of Urban Fabric of Rome.



Source: Own study using: Muratori S., Bollati R., Bollati S., *Marinucci G., Studi per una operante storia urbana di Roma,* Roma 1963.

3. Kolhapur as Urban organism

The city of Kolhapur has a history of an unusual development itself, which is irrespective of the context, quite similar to that of Rome. The development of ancient sites in Kolhapur started as six elevated mounds or hillocks as the river Panchganga has a risk of floods. The six ancient small settlements include Brahmapuri, Rankala, Uttareshwar, Padmala, Kholkhandoba and Ravaneshwar.

Brahmapuri, being the first of them all and the most ancient dating back to 2nd century BC is relatively on higher bank of river[16]. An excavation was carried out on this site by Deccan College Research Institute under Dr. Sankalia and Dr. Dikshit wherein remains of ancient houses have been found (fig.no 11) which is considered to be a Roman trader's house in the Satvahan period based on the evidences found in the form of artefacts and toys[15].

The development of urban fabric of Kolhapur can be divided into phases of centuries as different periods which were ruled by different dynasties. According to Sankalia's and P.T. Malshe's reports, following phases can be formed.

Phase 1 – this phase (the Satvahan period 200 BC) involves the settlement of Brahmapuri where brick houses were found following the development of Kholkhandoba and Uttareshwar settlements which were pretty much alongside the river[17].

Phase 2 – this phase (Rashtrakutas dynasty 700 AD) marks the establishment of the other four settlements which developed around water sources in the city namely Rankala, Padmala and Ravaneshwar.

Phase 3 – this phase (Shilhara dynasty 900AD) is an important phase since the otherwise disintegrated mounds were bound together by establishment of Mahalaxmi temple in the centre of all which led to conjugation of fabric in 9th century[18].

Phase 4 – this phase (Maratha dynasty 1700AD) marks the warfare of Marathas and Mughals within which the town did not grow as such, capital shifted from Panhala to Kolhapur 1782. Kings palace was constructed near city centre which then led to construction of city wall to appear as fort, also town was circular in shape as described in Karaveerapurana (Adhyay 10, 108 shloka)[15].

Phase 5 – this phase (British rule 1800AD), the first half of 19th century saw the haphazard growth and construction of houses according to their fancy. Houses badly ventilated and insanitary conditions. The Arrival of British superintendents gave a sense of safety which encouraged the growth of houses outside the fort wall. 1830, military reminiscences a sketch map of Kolhapur drawn by

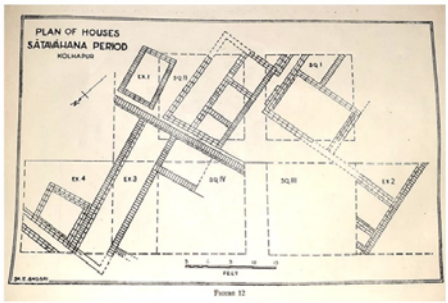
[16] Sankalia H.D. and Dikshit M.G., op.cit., 1945, pp. 07.
[17] Malshe P.T., *Kolhapur_study in urban geography,* 1967*,* pp. 91.
[18] https://cultural.maharashtra.gov.in/english/gazetteer/KOLHAPUR/his_silaharas.html [Access: 26-02-2022].

welsh shows the densely settled between river, stream and lake[19]. First survey map was published by the East India Company, 1852 which clearly showed the city connections to the nearby towns through important roads. Another survey map in 1862 showed compact settlement in Kot area (fort area) and several vacant areas were occupied with gardens (bagh) and lakes. The middle 19th century marked the expansion of city to the north where British residency with extensive barrack construction. This led to formation of Line Bazar and Race course. Another event of demolition of the fort wall in 1883 led to many good effects with respect to healthcare management and relieving traffic congestion.

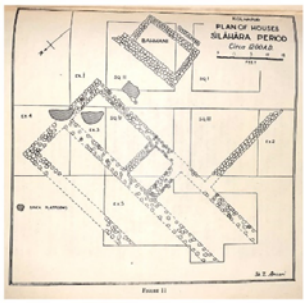
Phase 6 – this phase (Chhatrapati Shahu Maharaj and British rule 1900AD) had advancements in many facility functions of the fabric and plays a major role in shaping the matured fabric the city has in present. Formation of educational facilities, community boarding schools, industrial mills, entertainment-film industry buildings, sports facilities and grounds and various typological markets for trade and commerce took place around which the fabric evolved.

[19] Graham, D. C. *Statistical Reports of the Principality of Kolhapur*, Government of Bombay Presidency, (1854), pp. 113.

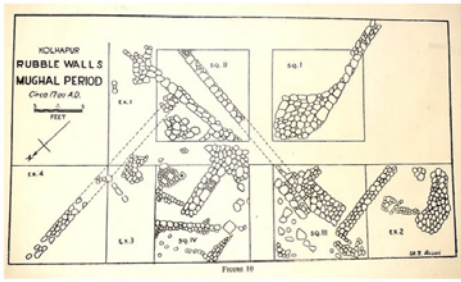
Fig. No. 10. Archaeological ruins of house plans.



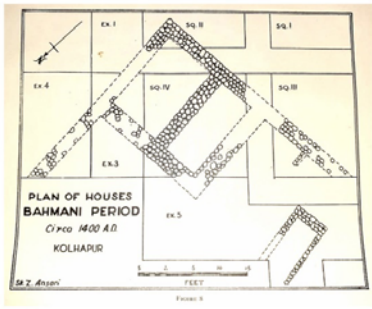
Satavahan House (evidences of roman objects)



Plinth construction technique



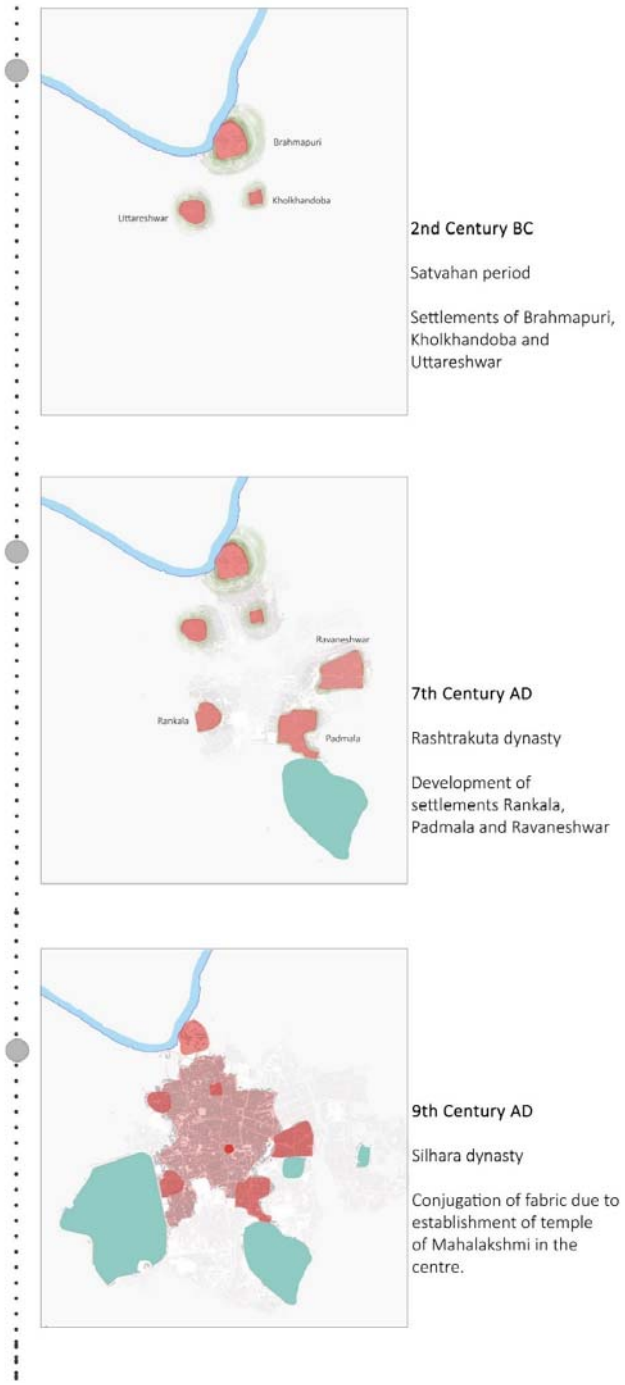
Kitchen and other rooms



Foundation technique

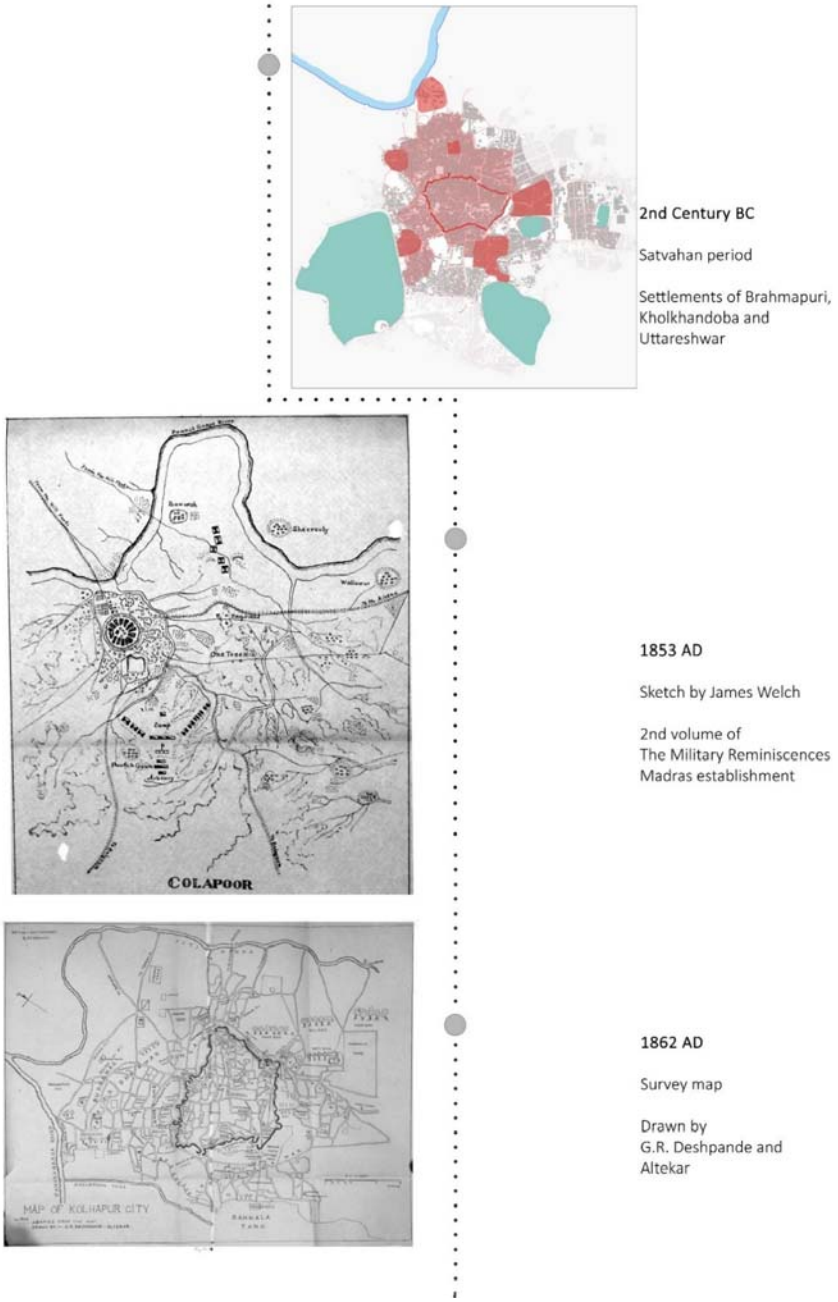
Source: Excavation report, Sankalia H.D. and Dikshit M.G., *Excavations at Brahmapuri,* 1945, pp. 27–31.

Fig. No. 11. Timeline of Kolhapur as city.



Source: Own study using Cadastral maps of Kolhapur.

Fig. No. 12. Timeline of Kolhapur as city.



Source: Own study using Cadastral maps of Kolhapur. Graham, D. C. *Statistical Reports of the Principality of Kolhapur*, Government of Bombay Presidency, (1854), pp. 113.

Fig. No. 13. Timeline of Kolhapur as city.

Source: Own study using Cadastral maps of Kolhapur.

4. Gianfranco Caniggia's approach of interpreting basic buildings

Understanding the evolution or change in an urban fabric can be defined as, using the critical consciousness on those of the spontaneous moves or design decisions carried out before. This brings us to, carefully observe the aggregation process, which gives us the key to define the base building module. The organic character which binds the route, building and pertinent area to form society of houses is known as aggregate[20]. Caniggia's approach of interpreting basic buildings involves primarily verifying the type of aggregate; whether it is a historically self-regulated system or changing organically in space and time. Furthermore, 'fabric' is what marks the formation of a building aggregate, which is usually the sum of the characters determined by their forming process[25]. The steps involved in analysing it are as follows:

1) Reading of the routes – this involves clear identification of Matrix route (before construction intervention), building routes (hierarchically subordinate to matrix) and construction routes (linking building routes together).

2) Reading the urban block – clearly specifying the building boundaries between the row houses or multifamily houses.

3) Geometrical simplification – creating a hypothetical scheme of simplified geometrical forms of the row houses and their pertinent areas if any.

4) Individualisation of the units – segregating each acquired geometric form of row house or multifamily house to define the average dimensions of each unit that forms the urban block.

5) Obtaining base building module – comparing all simplified geometric units, in order to graphically achieve the mean value of all types.

Italian cities derived from consumption of ancient and decayed urban organisms, which are housing units joined to form higher-level organisms[25]. The type of housing at origin of most formative processes of the cities developed starting from 14th and 15th century. So, let us take an example of one of the aggregates in Rome, to better understand the process.

The Jewish Ghetto of Rome – In 1555, due to the growing influence of Roman Catholic Church in the city, the Jewish population of the city was segregated, which became to be known as the Jewish Ghetto of Rome located in the neighbourhood of Sant'Angelo. It occupies an area located in the centre of the capital.

5. An attempt of interpreting fabric of Kolhapur and its base building

While analysing the urban fabric of Kolhapur and phases of its morphological changes, it is clear that the tissue formation in the earliest settlements has had lesser changes or adaptations with respect to planimetric values. Therefore, the aforementioned steps to analyse aggregation process can be carried out on those, in the area of Uttareshwar. Uttareshwar is an area on higher ground, less than Brahmapuri and is

[20] http://www.giuseppestrappa.it/?p=8380 [Access: 26.02.2022].

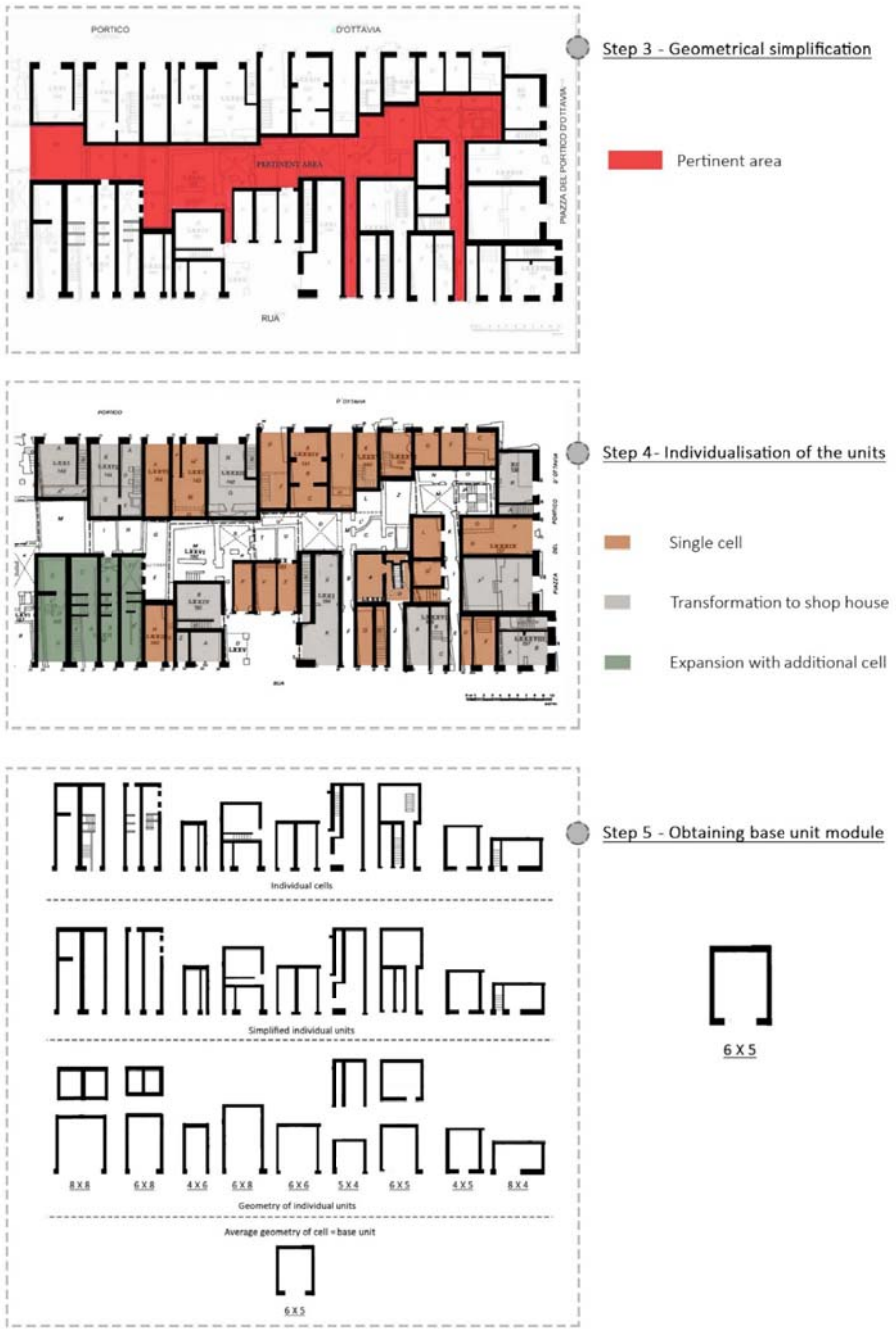
located in the centre of Rankala lake and the Panchganga river. An ancient shrine of Lord Shiva is found here and the portion is known as 'Langnapur' in ancient documents of 19th century[21]. As the shrine lies to the north of the Mahalxmi temple it further came to be known as Uttareshwar (Uttar=north).

Fig. No. 14. Analysis of Jewish Ghetto, Rome.

Source: Own study using Gregorian and current Cadastral maps of Rome.

[21] Malshe P.T., *Kolhapur_study in urban geography,* 1967, pp. 68.

Fig. No. 15. Analysis of Jewish Ghetto, Rome.



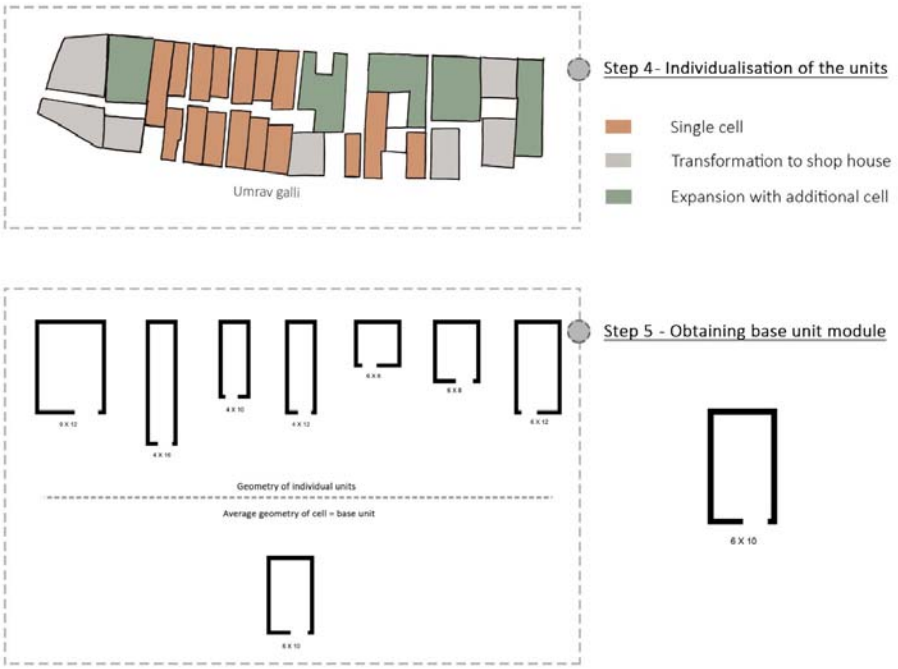
Source: Own study using Gregorian and current Cadastral maps of Rome.

Fig. No. 16. Analysis of tissue of Uttareshwar peth.

Source: Own study using Current Cadastral maps of Kolhapur.

The pertinent area of a typical block of the urban tissue of Kolhapur as observed in the above analysis is a transverse T shaped. The roads were extremely narrow, winding and full of filth[22]. The need to access many parts of the house from outside and to have easy access to plumbing and drainage services, very narrow setbacks were left in between two houses known as 'bol'. This explains the formation of courtyards as pertinent areas and the physical boundary separation between houses.

Fig. No. 17. Analysis of tissue of Uttareshwar peth.



Source: Own study using Cadastral maps of Kolhapur.

Conclusions

1) Excavations carried out in the city of Kolhapur are only at the ancient mound of Brahmapuri and it is clear that it is a vertical analysis of the archaeological ruins, which are evidences of a unique connection of the city of Kolhapur to the Roman world (trade). Horizontal excavations and analysis might support the connections more strongly and a more comprehensive idea of civilised life in different periods can also be traced.

2) Using critical consciousness in order to study the spontaneous consciousness of man in different periods of time irrespective of the cultural differences, shows us strikingly similar evolution of urban form in the two cities

[22] Malshe P.T., *Kolhapur_study in urban geography,* 1967, pp. 71.

herewith studied. The application of this approach can resolve the urban reading of different cities in different geographical and socio-economical contexts. This type of theoretical approach can reason many evolution and changing patterns of urban organisms in cities, towns and villages having heritage importance.

3) Carefully studying and applying Saverio Muratori's[23] Italian school of Urban planning concepts and Gianfranco Caniggia's approach of aggregation process could be one way and one-step in studying urban tissues of different cities. Italian school of urban morphology is one of the three main schools of urban planning analysis and has a simple set of approach methodology, which works in a descending way of identifying territory (edges of an urban organism), routes system, poles and nodes and finally house typology and base building unit.

4) This quality of it being universal, allows us to use it for micro and macro analysis of a city or a town. Which means that we can isolate an urban tissue of a city and study it or we can also study the city as a whole. Either way, the urban fabric of cities can be resolved part by part and can be reasoned according to its historical evolution or major changes.

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