The Distinct Character of a Capital? From Formality to Regularity of Our Ancient Capitals

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Abstract. Many cities were shaped by dynamics political and commercial factors and man-made layers whereas other capitals have been modeled spontaneously by natural influence. London is great sample of this approach and was described as a natural city planned over decades by many hands with great appreciation to natural terrain. Contrary mode is obvious in China where several factors behind the distinct identity of Chinese architecture and urban planning. Among those influences are the Metaphysics Philosophies or Emperor guidance who encouraged uniformity in many aspects in China including city planning. The aim of this paper is to highlight the impact of various forces and mankind dogmas in shaping up a unique character of famous capitals. Hence London and Beijing are the two contradictory case studies subject to deep analysis in parallel with other theories such as Yin - Yan and Fengs Shui principles, to examine their impacts on urban planning in China.

1. Introduction
To understand the Chinese architecture the culture of China must be studied, in particular the three primary theories, QI energy, Emperor Status, Feng Shui and the five elements. Feng Shui is one of the five main Arts streams of China, meaning how to harmonize a building or any settlements with surrounding environment, to enhance flow of energy QI coming from natural terrain “The Chinese art of siting has been applied in and mankind is its guardian a very wide range of spatial dimensions, from smallest of space- say bedroom or even the location of chair to larges; cosmic direction” The History of Cartography, p216. The building and settlements preferably positioned towards water body and at the mountain foot or towards certain star to retrieve luck. Moreover, the Chinese believe that the energy QI exists in living creatures and inanimate objects including natural elements such as mountains hence most of Chinese cities allocated nearby natural feature. Figures 1 and 2. “Mountains and rivers played an important role in the popular creeds of Chinese form the most remote antiquity as objects of worship. Mountains, forests, rivers, valleys, high hills have the power to produce rain and wind. Of all these things, it is said that they are then sacred powers,” Magic Square, p 31. Chang’an and Luoyang are major ancient capitals and where established between two natural barriers, beside the intangible benefits of natural feature, mountains are great natural defensive barrier against any invasion and a great source of construction materials similarly the water body provides water for farming and fulfil human needs in addition to acting as transportation tool to deliver labours or goods. Before laying down the settlement, the Emperor requests his officers to investigate the site and collect information regarding the availability of natural resources, soil and water quality nearby.
Figure 1 and 2. Settlements preferably positioned towards water body and at the mountain foot.

Qi theory is a second crucial methodology and contributor in shaping up the Chinese architecture, it has great influence on occupants’ mood and health. Qi is a creation of two opposite forces known as male Yan and female Yin. Those opposite forces epitomized by numbers, colors, seasons, direction, temperature or natural feature figure 3. These contradicting forces form everything in our universe and should be balanced otherwise disaster and chaos will occur.

| Female, Yin | Even numbers | Winter | moon | old | water | Poor, weak | distraction | Earth or valley | Black, dark | north |
|-------------|--------------|--------|------|-----|-------|------------|-------------|----------------|-------------|------|
| Male, Yan   | Odd numbers  | Summer | sun  | young | Fire  | Strong, rich | Constrictive | Heaven, mountain | White       | south |

Yin and Yan intermingle together to create the key elements known as Metal, Wood, Fire and Water, all living creatures or lifeless things in our universe are amalgam of those five factors. In Chinese mythologies the male force and female were created since accouchement of the cosmos and their harmonized admixture occurred at the center of our planet earths leading to initiate various deities and commenced life on earth. The fact the effect of Yin and Yan theory is tangible in building orientation, premises are usually designed to faces south to enhance air circulation and maximize heat and light attainment furthermore south is Yan the male power and a symbol of youth, wealth, and luck this lead to grid layout of city to allow south positioning of premises.

“The philosophy foundation of development of square–shaped cities in ancient china was determined by ancient philosophy such as the philosophy of YING –YANG along with the principle of the five elements of water, fire, earth, wood and metal. The theme of duality, which featured in these philosophies led to an emphasize on forming a central axis in the basic layout of cities and also promoted symmetry.” Chinese Architecture, p 9.

2. Central axis and well field graph

As early mentioned the interaction of two forces at centre of earth resulted in creation of first mankind - the Emperor, who was regarded the guard of earth, in charge of keeping male and female forces in harmony. This myth promoted centrality and enormously influenced the arrangement of building in city planning, as key buildings including government buildings or Emperor’s palaces were commonly located at the core of the city underpinning central Axis. Forbidden city is obvious sample echoes this principle, it was established at the core of Beijing accommodating emperor places and other administrative premises which were laid along central alignment including main gates. “The garden was the good Earth, and mankind is its guard for this he had to establish harmony in himself between yan and yin” Magic square, p35. Order is crucial to rule China the vast nation and the well field disarm is the upshots of central rhymester approach, in actual fact the amalgam of Chinese
philosophies including, Feng shui, the five elements, Centrality, Order and Yin Yan have spawned the well field system. The diagram is a mixture of numerology, cosmology, geomancy or astrology and the blend of such notions produced the 3X3 in one square graph locating the sentry the emperor at the focus of the diagram to safeguard earth. The well field diagram is the base for most of ancient cities throughout Zhou Dynasty, during this era the emperor authority overshadowed religious power hence the diagram a knowledge the setting of the Emperor at the centre between heaven and earth. The diagram accommodates numbers underlining Yin and Yan forces, the central square marked by the odd male digit 5 underscoring the five primary elements and comprises the imperial zones, ancestors and land temples exist in square 7 and 3 while the market in square 9 figure 4.

![Well field diagram](image)

**Figure 4 and 5.** Well field diagram reflects Yan force.

The well field diagram underlines orderly grid and the 9 main roads run horizontally and vertically in perpendicular arrangements and first application of the diagram was marked in Cheng Zhou 1036 BC figure 5. “This plan, like its counterparts in several other Eurasian civilization, was designed to illustrate and establish the centrality of the ruler, the son of Heaven who sat at the pivot of the four quarters and meditate between heaven and earth. Hence Emperors throughout Chinese history often concerned themselves with the geometric layout and numerical symbolism of the capital and its cultic sites and structure.” The History of Cartography, P212.

![Well field diagram](image)

**Figure 6 and 7.** Luoyang and Chang’an cities.
3. Case studies
The layout of Beijing, Chang’an and Luoyang cities reveals the impact of wholly Chinese metaphysics theories. All those cities acknowledge Feng Shui theory and were established at the end of mountains and nearby rivers. The last two case studies abide by well field diagram with cities adjacent to Wei River and Yellow River but the inner city location slightly changed upwards in Luoyang.

![Figure 8. Beijing city, the imperial zone undely the centraal axis.](image)

The logic of such alteration is clear as inner city is armoured by two natural barricades, the mountain Mangshan north east embraces imperial zone and is a great barrier while Luo River is southwards segregating internal city form outer district or any invasion coming from South. Furthermore, the river provides water supply for drinking or farming and Yan force underscored by 3 crossing bridges over the river figure 6. The wall surrounding the city accommodates three gates in each side apart from east side and similar arrangement is perceptible in Chang’an figure 7 in Chang’an city same rational applicable as Qinling mountain is a natural shielding border extending north protecting inner city from possible conquest coming across the north whereas urban fabric beneath inner city is a further obstruction if invasion occurs from southern direction. Beijing city is a third case study adhered the well field layout, Forbidden City occupies the centre and the influence of Yan forces is apparent most of the buildings within the imperial zone grouped in odd numbers 3 or five “The compound is divided into two complexes along the North – South axis; the southern outer court has three principal halls while the northern inner courtyard has another three main buildings” Chinese Architecture, p3”. South alignment is acknowledged as main entry gates of palaces are through south- north axis additionally temple of Heaven located southern Forbidden City and the journey to it is through the southern axis. Figure 8.

4. London the sporadic city
The great city of London is the opposite of Chinese orderly grid layout cities, London is a natural capital shaped over the eons by many layers with excessive appreciation to its natural features including; natural topography, layers of green infrastructure of hills, tidal flows, Thames River and its tributaries. The Thames exists since centuries and it is a key component of London’s urban fabric and crucial contributor in determining the form of settlements around its banks. In fact the river can be divided into three crucial segments:
- The core part is dense urban where government buildings and historical landmarks are situated
- The western part is Rural and famous for green parks
- The eastern part as a linking district with Europe through the sea. Eastern Thames accommodated harbours and great industrialized settlements built in 19\textsuperscript{th} century as point of trade off zones with the world beyond the sea. The logic behind such setting is the nature of river, the north bank along the middle part of Thames is higher than south and this meant flood risk is less, more sunlight and warmth gain in adjacent building in north bank. Hence the land here is expensive and government building or many historic landmarks of London have been erected in this share figure 9. Romans during their invasion of London recognized that the distance between the two banks is lest at the centre of Thames thus they composed the first crossing bridge in Lambeth and established their early settlements at middle Thames. In fact those are the forces and reasons why London was originated in this part and grew for decades within the bents of Thames from Westminster to pool of London figure 10.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{thames.png}
\caption{Thames’s banks and left figure London City during Romans invasion.}
\end{figure}

In comparison Southern bank of Thames is cheaper flusher with lower elevation and commonly sludge with other materials mount upon the edge and the access into the bank strict without lath. That effected the value of the land thus was uninhabited for long period. It was subject to several flooding events. It urbanized slowly in comparison with north bank figure 11.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{vauxhall.png}
\caption{Development of London 1780.}
\end{figure}

In 1661 Vauxhall garden opened a leisure garden that accommodated concert orchestra side shows beside masquerades. Then gradually southern side of Thames accommodated pleasure and entertainment components such as parks, globe and rose theatres, bull baiting, prostitution activities, warehouses, drinking and gambling. “The largest cultural complex in Europe, the festival Hall and National theatre that has been active since Shakespeare’s time. On the south bank, South of the Thames River are also the cherry gardens” shaping London p37. Later during the industrial revolution
the south bank identity changed; Vauxhall garden closed and different building types added including warehouses, wharfs, breweries, and private owned plots. Later in 1917, south bank quality was altered by creating a public frontage and river walkways to enhance its image and nowadays the river still accommodates great celebration events as new-year fireworks. The south bank is famous for the Mayor’s Thames Festival in September which is regarded the biggest public festival in London. “The south bank today has moved from being a world of introverted, inaccessible private utility to its opposite, a world of public recreation with access to all” Shaping London, p54. East Thames is inaccessible owned by companies and recognized as a connection ward with the world hence quays, offloading dock facilities or warehouses were dominant buildings types in this part. Immense trading activities evolved and numerous wharves constructed over decades to deal with goods coming from various countries such as Canada, Russia and Scandinavian countries, figure 12. Consequently an industrial district existed around the ports accommodating cranes, locks and gates, edges, water proof ponds and security high walls. Over the time Inwards looking Communities created around the river’s bent opposite the mud flats accommodating cheap housing, shops, pubs, cafes to serve the workers and sailors, in fact this vast complex of dockland was great phenomena in its time on many levels, figure 13.

Lastly, western Thames is distant from pollute estren comercial industrial hub and opens towards countryside as quality of life is better unpolutet remote from congested centre of London hence and up to nowadays western Thames is a pleasant expensive area. “Richmond palace and Hampton court were within the easy river transportation from the palace of Westminster, but away from prevailing wind that blew pollution and smoke downstream eastwards and out to sea” shaping London p26. Moreover the River with its secondary streams provide needed water to set up and maintain many parks located on the low banks on inside bent of the river, whereas the settlements are on the outer higher side of the bends. The Thames in western part in comparison with central urban bank is supplementary accessible thru several parks including Hampton Park, Bushy, Richmond and Marble hill park, old deer park, Kew garden and botanical garden. Those parks are vital municipal landscape woven within the bends of the river providing vital accesses to water body and endowing openness platforms to link with nature figure 14.

The tidal flow and flood risk is limited in north west bank and the availability of vast open public parks in Western Thames fortified wealthy citizens to reside western part hence the urban fabric in western Thames varieties from luxurious palaces to smaller nobility villas and houses or bungalows moreover houseboats are remarkable elements of Western Thames. Accordingly this assortment of premises and types of settlements in western part contribute in shaping distinct multi layered character of Thames and diversify scenery of upper Thames. “Bend in the river, the alternating of landscape and urbanization, the frequency of islands breaking the stretches of water into reaches of different scale all of this establish a pattern, a rhythm that makes this glorious section of metropolitan Thames area ” shaping London”.  

4.1 The impact of water body in shaping the identity of London

There are too many secondary streams linked to the Thames and those branches of water were key elements in forming London city, the 55 tributaries cultivating local communities and agricultural settlements originated around them till 18th as they provide water supply for farming and drinking,
sewage dumping and the power of water transformed by mills. Then after industrial revolution the land use was altered to accommodate industrial and residential developments for middle class workers and the usage of water evolved to create numerous remarkable parks where the streams regarded a feature of many parks. Westbourne River is a major component of Hyde park, additionally, Lea River in East London runs through Victoria park and Tyburn is a key element in Regent’s park whereas Revensbourne and Bevleybrook streams are crucial in many parklands in the South, including Richmond and Bushy parks figure 14. The urban grain between early mentioned four rivers differ according to layout and direction of rivers, hence developments appeared as piece of geometrical fabric located between irregular water courses figure 15.

In fact London unlike many European cities that were shaped by mankind hand from scratch, following formal grid arrangement, the layout of London is extremely shaped by land form and natural bent tributaries channelled towards the Thames, thus the water courses are first layer and the land in between formed accordingly over decades. “the genius loci of so much of central London. The streams beds are the first layer and the field in between are the second, which were laid out as residential estates and the crown lands of royal parks-St.James park, Hyde park/ kingsnigton Gardens and Regent’s Ppark furher to North. This makes up the essence, the geomatry of what we know of the core ,the heart of London “ Shaping London, p107”. Rivers of London are influential and they determine the uses of the land in between Lea River East London was a crucial route trading and transporting things worldwide throughout industrial era hence specific developments established in the land between waterbody. Whilst Thames Width and depth were main elements effecting the location of first part of London City, furthermore Thames shaped the layout of London thoroughfares as main arteries grows outwards in parallel ripple arrangement from the River Akin to annular encircle of trees, for instance Whitehall and Stand Streets are the first adjacent parallel ring to Thames accommodating ceremonial events. Thru early mentioned discussion the water body resulted in such natural layout of London the capital and Rivers were key elements affecting land uses, urban grain and resident’s stratum.

**Figure 14.** Parks along Western Thames.  
**Figure 15.** River Thames and its streams.

5. Conclusion
The Thames and its tributaries were and still a great contributor in shaping the layout of London city, water channels were vital Catalyst for transportation and farming. Romans initiate London City near an area where the river is deep enough for vessel movements and narrow to connect by bridges thus London as a city grew up around the Halbrook area on the north bank as the land and sun light gain is high consequently flood risk is less. The land was precious inhabited by nobles and places, historical landmarks or vital government buildings established in northern part. West of Thames is distant from
eastern commercial industrial zones and dense congested central urban fabric moreover West London accommodates openness landscape and availability of vast green parks with good quality environment raised the value of land. The negative impact of natural terrain is visible in southern bank where the land is low and subject to several flood events this effected urban fabric and the area was developed slowly in comparison with northern bank and land uses were limited to entertainment activities thus watercourses and natural geographies were first layers then manmade urban fabric woven between irregular lines of streams forming a distinct natural Capitals. London is the opposite approach of Ancient Chinese capitals when the impact of metaphysic theories and Emperor Status led to emphasizing central axis and orderly grid layout cities evolved during Zhou Dynasty and influenced the outline of many Chinese capitals during different dynasties. Most ancient capitals reflect Yin and Yan theory, Feng Shui and the five primary elements principle this resulted in locating settlement nearby water body and natural terrain to utilize Qi energy. While acknowledgment of Yin Yan forces led to south facing preferences and odd numbers were dominant feature representing male power and commonly used in grouping building.

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