Chapter One
1.0 Form of Cities and their evolution pattern.

Human settlements originated and developed as a collection of dwellings. They originated to fulfill the need of humans to stay as a group and to protect them from different forms of natural disasters to human life. When they needed to live closer to water sources they decided to dwell along rivers. When the surplus of their food has to be protected they formed a circles and assigned the center for the storage of food. However, they settlements had limitations. The primitive societies lacked the power to go beyond the forms of nature such as mountains, slopes, rocks, forest. So a settlements had to obey the natural forms. The functions, which were the concept for the settlement form, had to be moderated when they met natural forms of the topography.

With the development of the human civilizations people learnt the ways and means to extend their settlement forms against the nature. However, during the early periods when civilizations were forming there were many disasters originating from manmade reasons which made one group of people to become the enemy of another. As a result city walls were built around the settlement. The internal arrangements of such cities were organized by the activity which was determined by basic needs and wants such as the economy politics and other social needs. These social and cultural aspects changed from one settlement to another and the forms of the settlements have changed accordingly.

Culture of any given society had been changed from time to time. Settlements extend it's periphery due to either war or natural growth. Some had lost their own cities due to many reasons such as natural disasters, war, and the natural death of cities. Natural death occurs when the aspirations of the changing culture has not been fulfilled by the old cities.
1.1-Characteristics of a city

Character is the quality, which helps to derive a city from any other human settlement. The quality generated by certain components and their relationship with each other. The nature of these components changes from one city to another.

According to Kevin Lynch,
"City forms, their actual function and the ideas and values that people attached to them make up a single phenomenon".

The city is seen and understood by people as a single whole although it had been made out of many components These components according to Kevin Lynch,

(i)-The city form
(ii)-The function
(iii)-Ideas and values of people

The character they sense do not happen by a clear understanding about the components and the way the components meet each other to form the city. The image of the user who experiences the city for the first time differs from the image he gets after several visits to the same city. But this image can help identify the good cities from the bad cities.

It is more easier to identify these components as,

(i)-Physical attributes.
(ii)Social attributes

1.1.1-Physical Attributes

The buildings and other built elements in a city can be considered as physical attributes. Physical attributes determine the character of a city

"The most enduring feature of the city is it's physical build, which remains with remarkable persistence, gaining increments that are responsive to the most recent economic demand and reflective to the
Some times the other elements of a city can be memories to people because of their meaning given by their age.

For example the fort cities and the elements of them has become important monuments of the present city.

1.1.1.2; Physical and legal boundaries and the city character.

Cities are places that have some physical circumscription. This can be in the form of material or symbolic.

This has stood to separate those who belonged to the order from those who did not within the ordered historical cities.

(illus; 11,12)

For J F Sobry (1776, Del Architecture.)

"A city without walls is not a city".

Even with physical circumscription there is a legal perimeter within...
latest stylistic vogue, but conserving evidence of past urban culture for present and future generations."

Spiro Costoff

The physical component stands as the communication media between each individual in a city. The theme they want to express mostly in historical cities were the expression of power. Later with capitalism the common message was the economy. The styles they applied had to convey the message more effectively than before. Therefore the competition between individuals has made a pathway for the creation of new styles. In that context the old styles left are less important. However, the value and meaning inherited in the old styles cannot be forgotten. When they are compared the different types of expressions gives the single message of economy during different ages.

The characteristics of the physical components can be identified in different aspects and in detail.

1.1.1.1: Identity of the components of a city.

City can be identified as a collection of few outstanding elements. They are,
(i)-The Fabric
(ii)-The Objects
(iii)-The public places
(iv)-The monuments.

(i) The Fabric-

Fabric of a city changes from a row of houses. The difference made by the diversity of the activities and by the nature of the city fabric. (Illus. 7)
ii) The object
Citizenry monuments as well as technical monuments are important to an identity of a city. In some cities predominant places of a city were the palace and the temple. But in people's city the palace lost it's dominance over the rest of the city and became a place of people. (Illus; 7)

(iii) Public places
Public places of a city give a scale to the city. The public spaces can be further categorized in to few types. (Illus; 8)

a) Streets

b) Public gathering spaces

(a) Street
Kevin Lynch defines them as paths and as a space which helps to experience the city character. The width of the street and the buildings along them and the vegetation determine the character of the street.

(b) Public gathering spaces.
This varies from open spaces to buildings. The nature of these public spaces change due to the cultural aspects of a city. Open public spaces were essential elements of the most of the good cities in the history with time the administration related civic public place was neglected and commercial public spaces became prominent.

(iv) Landmark
The physical elements made for the purpose of thememory of the people and the events of a city.
which restrictions and privileges apply. The nature of the boundary or the edge has changed with time. The edge has changed from huge walls with deep moats to a small board, which indicates the name of the city. Some has a gate to symbolize the edge.

For Kevin Lynch the edge is a linear element which connects two regions. According to him, this linear element can separate two regions and visually indicate the legal circumscription of the city form of today.

There are different solutions made by different cities to have an edge to demarcate the edge between the old city and the new additions.

Thus certain cities fail to do so and with the growth not leaving a physical circumscription they merge with villages and towns and then lose the identity of a city.

1.1.1.3-Cities and their hierarchy among other human settlements.

Cities come in clusters. Never exist unaccompanied by other towns. Inevitably locked in an urban system an urban hierarchy. Even lowliest towns have their dependent villages.
Braudel says

"The town only exists as a town in relation to a form of life lower than its own...It has to dominate an empire however tiny, in order to exist."

City has to be prominent among other towns and this importance defines city character.

1.1.2-Social Attributes

"Cities are most enduring of human artifacts and human institutions. Its duty is both duty and homage." Spiro Costoff

The artifacts would generate an attachment with the city and develop respect towards the meanings expressed through the art forms. To be part of the system and to become an observer of the activities generate pleasure within the minds of the people. The great artifacts that can be seen in Rome, Greek and many historical cities had been shared by many generations throughout centuries.

Illus.13; People and the city

Illus.14; Economy and the city
"Urban society change more than any other human grouping of Economic innovation comes usually most rapidly and boldly in cities Immigration aims first at the urban core forcing upon cities. The critical role of acculturating refugees from many countryside's, and the winds of intellectual advance blow strong in cities." - Spiro Castoff

The value and the aspirations are unique in those who wish to live in cities. They reach one goal after achieving another. Therefore cities have past evident, present, and the hopes for the future. The economic challenges they face create the battle against.

1.1.2.1; Relationship between the character of the city and the size of the population.
Cities are the places of certain energized crowding of people take place. There is no relationship with the number of people and the character of the city.
Vast majorities of town's pre industrial period are small. Holy Roman Empire had only about 12 to 15 had over 10,000 inhabitants.

1.1.2.2; Social hierarchy and the purpose of the city
In cities people specialize different work. The City is a place where people are priests or craftsman or soldiers and where wealth is not equally distributed among the citizens. These distributions create social hierarchies; the rich are more powerful than the poor are; the priest is more powerful than the artisan is.
Different ethnic groups and races can be seen in cities. Besides ethnically homogeneous cities, as the original Yoruba cities were intended to be, there might be slaves or transient traders.

1.1.2.3; Source of income and the city
In the economical perspective the city is a place favored as a source of income.
Human settlement developed with the sources like trade intensive agriculture and the possibility of surplus food, a physical recourse like a mental or a
spring (bath), a geomorphic resource like a natural harbor or a human resource like a king.

1.1.2.4: Laws and the ownership of the land in a city.

Cities are places that must rely on written records. It is through writing that they will tally their goods, put down the laws that will govern the community, establish titles to property, which is extremely important.

Because of that in the final analysis a city rests on a construct of ownership. The land subdivision has direct impact of the character of the city. The private ownership of land causes problems when considering the activity, scale, homogeneous character and the pattern of the urban form.

1.2-Classification of cities.

The capability to relate the Medieval and Renaissance period styles to colonial Period City form in south Asian colonies is questionable. But there are similarities such as the city form and the street patterns, specially the city wall.

The form of the cities, belonging to different periods, have not properly related to their cultural contexts and no efforts have been made to distinguish the relevance between the style periods and the urban form.

“There is as yet no credible effort to distinguish a Romanesque or a gothic or a Rococo city, for example, except as a chronological convenience, but we are ready to recognize a Baroque urban aesthetic and at least one historian, Kert W. Foster, has interpreted the plan of Sabbionata, the Gonsaba town of the 1550, as a Mannarist Grid.”

-Spiro Costoff

There are other typologies of cities categorized according to their policy and industrial revolution. Therefore the colonial city form can be considered as a prototype which had been transplanted around the world without care either on the function or on the location.
These city forms express the need for defense. And became monuments of a past era of a place.

1.3-Cities As An Exclusive Settlement.
Among the different types of human settlements the "City" has its own characteristics. There are different definitions for cities. The city is identified and defined in different ways.

"Regardless of their origin, their birth place their form, their makers, a relatively large, dense, and permanent settlement of socially heterogeneous individuals"*  
-L Worth

This sense more social content than the physical aspects of a city. To fulfill the purpose whether administrative, commercial or recreational, the human component has to be there. The complexity of activities, diversity and the capacity of services it can provide determine whether a settlement had reached the city-state.

For Mum ford, the city is,
"A point of maximum concentration for the power and culture of a community"*  

Power of the leader or the state in different means the wealth, technology man power (slaves) properly express through the physical component of a city. The grandness and the rich character of the cities given by and the scale of the palaces, churches and the administration buildings, The administration system and its power over the making of the city visible through the old grand cities in the world. The arts, the best they could produced were there for the city. The cities, which are having problems with its form, have the weaknesses of the power of the leader or the state, which has the responsibility to control the development of the city. And also the concept of the concentration of arts and crafts has been controlled by the wealth of technology as well as the poverty. The economic and political systems can make great impacts on the expression of different art forms for example. The need to express individual ideas to the city through one's own
art form break the harmony and composition of large components like street facades which belongs to many owners. (Illustration.)

The political and the economic system have created many different types of cities.

Among many different typologies the categorization made by Costof in his book The City Shaped can be considered as the best system to study the social and political relationship to its city form.

Accordingly three types of cities can be identified.

1.3.1-The pre industrial city
1.3.2-The Industrial city
1.3.3-The Socialist city.

1.3.1-The pre industrial City.

These cities consist with a limited population of about 100,000 people. (Lack of land use specialization)(Lack of social mobility) Social structure consists of basically from two classes. They were the Elite and the lower class. The Government, Religion, and residents of the Elite occupied the City center. Rest of the society were grouped into different occupational groups.

Though these cities can be selected as the great cities in the world the expressions of the true nature of the society and the expressions of the poor has been never allowed to be visible through the built fabric.

The harmony did not exist within the society though it was visible through the physical fabric. And the cities were not for all but for few to live luxuriously.

But the religious and the public places were more sympathetic for the lower classes and through the religious dominance they became a part of the city and the city became a part of their life.

1.3.2-Industrial City

These type of cities emerged in the 18th century. Capitalism dominated through every form of art. City form was affected by the concepts of capitalism in many ways.
The social aspects drastically changed with the economical aspects. The whole society moved towards a single target. More communication through the art form was important and everyone was able to express themselves to others. Some cities that have achieved the goal, which is the wealth, had been able to achieve the visual attributes of the city form also. Where they have gone through researching for advanced systems and technology to make better cities. Instead of widening the periphery of the city they decided to achieve space over the sky. With that the city core areas were replaced by economic activities. The core area became the top most level of the hierarchical order. Ex; Japan, Singapore, American cities.

But the capitalism failed to change the traditional system of the evolution in most cities

Due to the political, and economical disability of underdeveloped countries. These cities suffered from the lack of visual and social aspirations.

1.3.3-Socialist City (Garden city)

Central operation principle. - Abolition of capitalist ownership of land and property.

The government decides the size and look of public spaces, the amount of housing, size of the living units, pattern of transportation, and question of zoning. Rent and profit have nothing to do with these decisions.
Sofia and East Berlin, for example, had a vast public space of a ceremonial nature occupying much of this central area where the thick of things had seen.

Illus. 16; Socialist city by Ebanadze Howard

There is in addition, a park of culture and rest for recreation of the working people, with promenades, tearooms, picnic areas, and the obligatory socialist monuments.

There are outstanding differences between socialist and capitalist -industrial city. Instead of large consumer good and banking areas seen in Capitalist City, the prominence had taken by public welfare goods and services. The population density is higher from the inner city to the periphery, where the lower density in the capitalist city. Public transportation was fairly higher than the west. Urban growth followed the officially determined transport routes in the socialist city. Unlike in the western the socialist city successfully gets rid of the problem of squatter settlements.

1.4-Form of cities.

The city form can be categorized into two basic typologies when considering their origin. They are:

i)-The organic city
ii)-The planned city

1.4.1-The organic city

These settlements had built with a limited force against the nature. When the human needs become the prime goal to live in a settlement the organization pattern, the convenience, and other visual attributes as well as the other
conceptual attributes has to be sacrificed by an organic form. But the organic cities were considered as better places for human habitation.

As Lewis Mumford says, “Siena, as a city developed spontaneously the way it formed by filling and solidifying the shapes of it’s natural sites, the aesthetic and engineering superiority of an organic plan”

Illus. 17; Organic city.

As Lewis Mumford says, “Siena, as a city developed spontaneously the way it formed by filling and solidifying the shapes of it’s natural sites, the aesthetic and engineering superiority of an organic plan”

Illus. 18; Different types of origins of organic cities

1.4.2-The planned city

Early cities which were planned had clear geometrical forms. The planned city has been given its form by different concepts of different planners or designers. These concepts backed by the cultural aspects of their society. Among the cultural aspects dominating aspect determined the city form. But when considering the city plan the organization of different spaces, the street layout and their composition had not always responded directly to any of the cultural aspects of the society. Therefore it’s difficult to understand the
culture of a society through its city layout.

"To the form seeker, for example, a grid is a grid is a grid. At best, it is a visual theme upon which to play variations. He might be concerned with issues like using a true check board design verses syncopated block rhythms, with cross axial or other types of emphasis. With the placement of open spaces within the decipling of the grid, with the width and hierarchy of streets."^{12}

Spiro Costoff.

In most of the city plans the streets had been laid in to a grid system. Although this grid system is not identical to any particular culture; it is identical to the planned cities.

The most of the colonial period townships also were planned ones. They had a rigid form and the streets were always designed as a grid. Some cities had originated as planned cities and developed organically Present City forms consisting planed sections as well as unplanned sections.

In some other examples planned extensions had been added to the planned old cities. In them also there are organically developed extensions can be find. In the present context the city forms are controlled and extended according to the regulations, and the policies.
But within that framework also there were unplanned areas in the cities. They can be called the squatter settlements. In most of the underdeveloped cities these unplanned deteriorated sections can be seen either as later extensions or as urban infills.

Illus.20;City plan by Leanoardo Davinchi :Consideration of cardinal directions

1.5-Evolution of the city form.

Although the cities had originated with a proper form they have not remained as static objects. They have changed with time. The culture of any society change with its evolution. The cities has changed their original city form due to various reasons. The original city form and its geometry have devalued by other needs of the city builders.

For Oley Graber,

"How many people beyond the immediate entourage and time of it's founder, the caliph Al-mansard, experienced the famous round city of Baghdad It hardly ever lined in the perfect shape conceived for it" 13

"Even during the lifetime of Al-Mansard suburbs were added, the carefully drawn internal divisions broke down, and the round city became only a part of the enormous urban complex of Baghdad."(Illus;21)
Illus. 21: Urban process; The city form changing with time

The growth of cities. The process of leapfrogging as the built-up area expands, leaving gaps

Some city forms could be found under many layers of soil, which were formed over centuries. Ex: Ruined ancient city of Anuradhapura.

The younger cities are found with an older part and a new part. When the old part cannot cope with the new population and the nature of the activity a new part had generated.

Ex: Old Delhi and New Delhi.

Some cities built on top of the ancient cities. And some has many different styles representing different ages of the city.
Illus. 23; Planted Roman Empire throughout the Mediterranean.
Left: Evolution of it in the city
Right: Modification done of the same town in Italy

Illus. 24; Planned extensions for the same city

Illus. 25; Changes made to the city fabric.
Illus. 26: City extended by two planned suburbs.

Illus. 27: Gdansk (Poland) chose to create its historic center. The restores work with immense care across the river old patterns were completely abandoned.
### 1.5-Historical Cities of Shri Lanka and their evolution.

#### The Urban settlements of Shri Lanka

According to the historical evidence the first urban settlements had started about two thousand years ago. The periods can be categorized as indicated below.

<table>
<thead>
<tr>
<th>Period I</th>
<th>Mesolithic</th>
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<tbody>
<tr>
<td>Period II</td>
<td>Mesolithic iron age transition</td>
</tr>
<tr>
<td>Period III</td>
<td>Prehistoric Iron age :Ca 950-600 BC.</td>
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<tr>
<td>Period IV</td>
<td>Based early historic:Ca 600-500 BC.</td>
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<tr>
<td>Period V</td>
<td>Lower early historic :Ca 500-250 BC.</td>
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<tr>
<td>Period VI</td>
<td>Mid early historic :Ca 250 BC -100 AD</td>
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<tr>
<td>Period VII</td>
<td>Upper early historic :Ca 100-300 AD.</td>
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<tr>
<td>Period VIII</td>
<td>Middle historic :Ca 300-1250 AD.</td>
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<tr>
<td>Period IX</td>
<td>Lower late historic (Dry zone):Ca 1250-1350 AD.</td>
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<tr>
<td>Period X</td>
<td>Lower later historic (Wet zone):Ca 1350-1400 AD.</td>
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<tr>
<td>Period XI</td>
<td>Mid late historic :Ca 1400-1500 AD.</td>
</tr>
<tr>
<td>Period XII</td>
<td>Upper late historic :Ca 1500-1815 AD.</td>
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<tr>
<td>Period XIII</td>
<td>British Colonial:Ca 1815-1948 AD.</td>
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<tr>
<td>Period XIV</td>
<td>Post independent period:Ca 1948 onwards.</td>
</tr>
</tbody>
</table>

Illus. 28: A periodic tabulation of the history of Shri Lanka

The urban settlements those have recovered indicate that there was a continuity in settlement and urban development in different physical forms found in these areas up to the end of Middle historic Period from the Mesolithic beginnings and it forms a long period of more than two thousand years of occupation. These settlements can be categorized as...
**Capital cities**-Anuradhapura,Polonnaruwa,Dambadeniya, Kurunagala,Yapahuwa,Kotte,Kandy, were the capital cities in Shri Lanka.

**Ports** (Teertha Gama)—Mathota,(North western coast)Devundara,Godavaya and Kirinda at south eastern coast.

**Market villages**—They were called ‘Niyamgam’

**Devalagam,Viharagam**—These Villages were owned by feudal lords or temples and called ‘Nindagam’.Examples for these villages are Gadaladeniya,Lankathilaka

**Vapagam or Wawgam**—(village settlements in relation to an irrigation reservoir or the Wawa.

Most of these villages were occupied by occupational clans or were sometimes mixed fulfilling a communal responsibility in service and existence among each other. These were originated considering geographical factors such as locations for paddy cultivation near a water source, ports at natural harbors, and military routs in locations of unpenetrable topography. Has selected for the fortified cities. (Illus.29)

As for Prof. Nimal de Silva,

"*The tradition of Sri Lankan urban form continued for a period of more than two thousand years. But the basic features and the urban elements continued in the same pattern even though the location, Form and scale changed from time to time.***"14

With the Colonial invasion the ports were captured and built Fort cities along the coastal areas. These ports were captured by Portuguese, Dutch and the British respectively. Thereafter gradually they had penetrated in to the country. (Illus.30)
Plan forms as given in Silpa Texts

1. DANDAKA
2. SWASTIKA
3. NANDYAVARTA (in Sthanila)
4. NANDYAVARTA (in Manduka)
5. PRACTARA
6. CHATURUKHA
7. SARVATOBIADA
8. PARMAKA (in Sthanila)
9. NANDYAVARTA (Circular Plan, After AMANTHALKAR and BASU, Indian Architecture)
10. PARMAKA
11. KAUKHA

Illus. 29: Plan forms as given in Silpa Texts
Illus. 29: Ancient cities of Shri Lanka
ILLUS. 29: Ancient cities of Shri Lanka
References

1. Kevin Lynch, The City Shaped. Pg;

2. Spiro Costoff-1991, The city shaped pg-

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