

The Cartographers' Guild
Guide to the
Creation and Depiction
of Fantasy Cities



By Ravi Shankar

www.cartographersguild.com

Second Edition May 2009

Introduction

The Building of Cities is one of man's greatest achievements. The form of his city has been and always will be a pitiless indicator of the state of his civilisation. This form is determined by the multiplicity of decisions made by the people who live in it.

*Edmund Bacon
-Design of Cities*

This guide is an explanation of how to build and map an imaginary city in a low technology or fantasy setting. City construction and depiction are not separate processes: your city will almost certainly require a sketch at an early stage to assist in the process of visualisation, this in turn encourages ideas about design elements, such as architecture, inhabitants, economic and social boundaries. Alternating between textual and visual descriptions is a good way to work as it helps to ensure an internal consistency between the tangible and intangible elements of your city.

The twin primary objectives of any fantasy city builder should be to give the city a distinct personality and to make it memorable. The degree to which a city is credible, that is, logically feasible, is a matter of degree to be judged by its designer with an eye on the expectations of his or her audience. Cities that are too credible run the risk of wasting the designer's time in creating elements which the audience will not see or appreciate and worse, there is a risk that the city might appear pedestrian because of real world strictures placed upon it. On the other hand, overly unbelievable cities destroy the suspension of disbelief which is required for any fantasy world to successfully exist. Generally audiences are forgiving and designers can depart from credibility so long as the city fulfils the twin objectives. If in doubt, opt for personality over realism, a 200 metre high stone colossus standing astride a river may be a physically impossible feat, but this is fantasy after all and the designer will receive more credit for a grand idea which stimulates the imagination than by ensuring that there are enough market places to support a population density of 200 people to an acre. One only has to recall the great cities in fantasy literature, such as Khazad-Dum in JRR Tolkien's 'Lord of the Rings', to remember that its vast and intricate underground chambers were so majestic and enthralling, worries about how such a dark place could produce enough food to support a population of thousands of Dwarfs never materialised in the reader's mind.

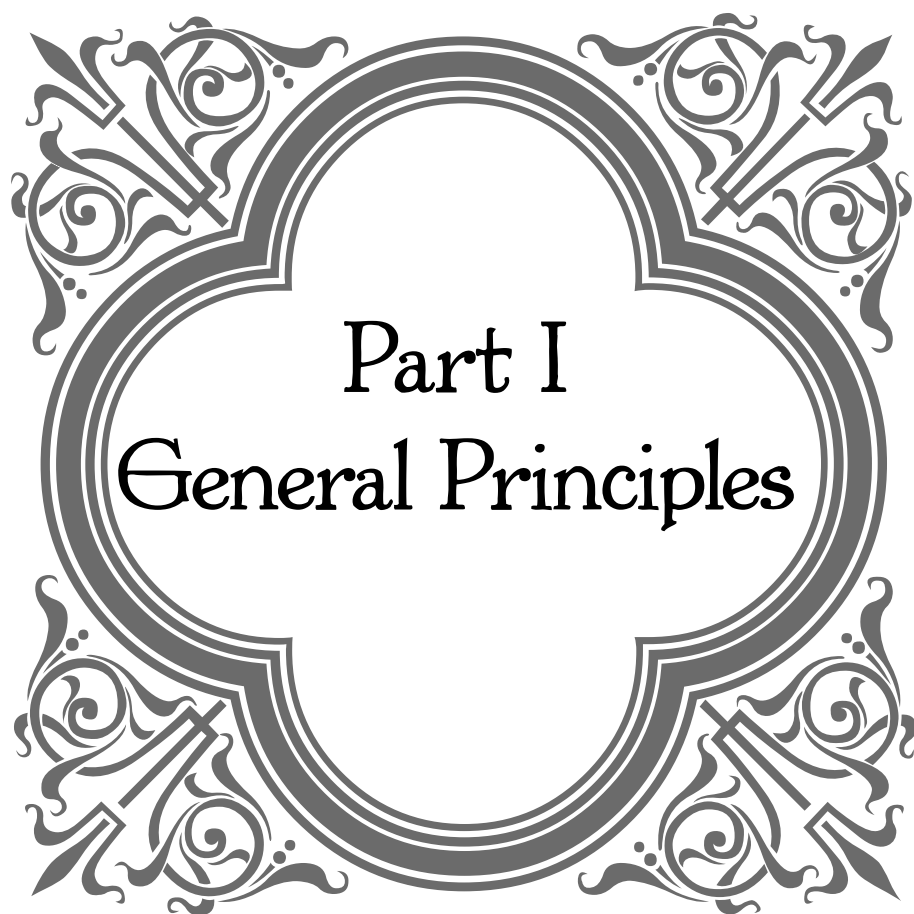
That said, making a memorable city, particularly one which is populated by humans, involves a number of processes which encourage the reader to readily believe that people could live there. This involves (among other factors) giving the city a sense of history and architecture consistent with its environment (you would not expect to see Bedouin tents in Arctic tundra any more than you would igloos in the desert) and above all an instinctive feel that this is a place that has been shaped with a particular purpose in mind by the hands that built it – the 'pitiless indicator of the state of civilisation' that Bacon mentions above. So making a memorable city means that the designer will need to know at least the basics of urban design in real life, particularly that of older cultures. As we shall see, reference material on how and on what principles cities of antiquity were built can be immensely valuable.

To be memorable, a city should avoid cliché, which means that it needs to possess at least some originality. In fantasy RPGs cliché is often the norm, (and expected in many cases). The processes I describe are intended to promote more original cities but of course they can be used to produce 'standard fantasy fare' if required which will involve less creative thinking.

One does not have to follow the processes described in this guide in any particular sequence and none of the processes are written in stone. They are intended to be starting points from which a fantasy city can take shape and grow in a more or less balanced way. The designer should feel free to add his own methods and sequences so that the design experience is comfortable and natural. Creators of new processes are encouraged to post them at the Cartographers' Guild: www.thecartographersguild.com together with any comments that they wish to leave for the author.

This guide will be published in parts. Part I being a discussion of some general principles to city building. Over time I will almost certainly come back to previous parts and amend them. Further parts and new editions to this guide may be found at the Cartographers' Guild at the website address mentioned above.

Ravi Shankar, August 2008



Part I
General Principles

Describing Personality.

Authors and RPG creators almost always have the aim of evoking an emotional response from their readers, so it is only natural that their cities should work in step with this aim. The first question in the process should therefore be: What emotions should my city evoke? Wonder? Menace? Comfort? Bustle? Tranquillity? Different parts of a single city might evoke contrary emotions, nevertheless try to keep in mind an overriding emotional response or two for the entire city.

As a preliminary exercise, think about the great cities of the world both past and present and try to describe them in sensory terms – sight, hearing, touch, smell and taste. For example, how does Casablanca in Morocco compare with Lhasa in Tibet? The chances are that you have never been to either of these places (I haven't) but you have perhaps read about them or seen them in films. It does not really matter what they are really like, what is important is how you feel about them and what emotional responses they provoke in you. From describing these places in sensory terms it is an easy step to arrive at an emotional response.

For example, when I think of Casablanca I think of busy bazaars, narrow streets, poor urchins, rich merchants, unintelligible gabbling languages, a claustrophobia from the press of people, ever present noise, low standards of hygiene in public places, dust, a sudden boundary to open desert, a cacophony of different smells, little or no wind and rain and a stifling heat.

When I think of Lhasa, I think of a huge dominating palace over a low rise, stepped city of uniform stone buildings, wide streets, crisp thin air, a sense of peace and solitude, a simple but spiritual people, incredible sunrises and sunsets and panoramic mountains on a majestic scale.

Summing up Casablanca in emotional terms I might arrive with the following: Dangerous, crowded, chaotic, oppressive, hot. And with Lhasa: Peaceful, ordered, intolerant of change, cold. These words describe the personality of the city.

When I approach the design of the city I will have foremost in my mind these personality traits and I will try to abide by them. If a city's dominant climate is cold, I might choose to map it in whites or blues. If hot, in oranges or reds. Of course, following the personality traits too slavishly will result in caricatures or cardboard cut-outs,

Example 1

In my constructed sword and sorcery world, I have placed a city on a mountainous northern coastline with a with high cliffs dropping down to the sea. I have determined that the area has bitterly cold winters and temperate summers and is inhabited by humans who hunt a particular type of large sea creature which they trade in the south.

For my own reasons (perhaps related to the RPG's or novel's plot) I want the city to have an emotional response which is insular, threatening, arrogant and proud of past (and lost) glory.

It would be very easy to immediately seize upon some adaptation of a Viking race, (northerly climate, sea-farers, possibly warlike) but let us try to be more imaginative than that.

As I did with Casablanca and Lhasa, might jot down the following list of sensory input: Huge crenulated ships pulled by some manner of sea beast (threatening), a walled city with few entrances (unfriendly), made of dark stone (threatening), perched on a cliff (dominating/arrogant). Small cramped buildings (unfriendly and easy to heat in the cold), few public spaces (unfriendly), ornate, high crumbling towers and a courtly language (faded glory), public displays of weapons (threatening), few or no inns for strangers to stay in (unfriendly). A loud horn in one of the towers to guide ships home in the fog (domination by sound), a martial culture (threatening).

Example 2

Let us suppose that I want my city to have the same geographical location as in example 1, but I want it to have an entirely different emotional response: friendly, hardy, simple and strong.

Now the following images come to mind: light coloured buildings widely spaced with large windows, gardens and greenery (perhaps a pine-forest with open pastures and alpine flowers), lots of public space (perhaps a village green or public square), a busy dockyard with sailors mending nets, few if any weapons on show and a large tavern at which locals mix with strangers.

but as your city develops using the other tools and methods mentioned later, your city should grow a sufficient patina of complexity to ensure that it is not seen by the reader as overly two-dimensional. When designing a fantasy city, you are unlikely to have any but the most rudimentary sensory feel of the place; perhaps a notion of the climate, topography, the race of inhabitants who live there and basic politics. It is therefore often best to start with the emotional conclusion and from that extrapolate the sensory data from which the details will emerge.

The Splatter Diagram

A splatter diagram is an excellent tool to begin the detailing of your city. As you fill out your splatter diagram you will begin to get a much better idea of fundamental elements and their relationships with each other. Making the splatter diagram is perhaps the most intensive and fun part of the process of city building. Here is how I go about it.

First, get away from the computer; all you need is a pen and paper. Find a quiet place and picture yourself standing at the gates of your new city. Think carefully and try to feel the emotional descriptions mentioned the last chapter. In your mind's eye, think about everything that you can see. In your mind's ear, talk to the city natives. Wander through the city streets. Who do you meet? What are their day to day problems? Where do their loyalties lie? Where do they live? Who are their enemies and friends? Who are their family? What sorts of events are taking place around you? A street brawl? A magnificent pageant? By having imaginary conversations with them, think about what languages they speak, and what they wear, whether they are rich or poor, where they live and what they eat and drink. Jump into their characters and become them. Live a day in their lives. See where they go and what they do. Now you are familiar with the people, look at the buildings. How high are they? What are they made of? Are they plain or ornate? Clean or dirty? How narrow or wide are the streets? Is the landscape flat or sloped? Are there any dominating features like rivers or mountains?

The old adage 'A picture is worth a thousand words' is very appropriate here. The sharper and more complete your mental image of your city, the easier it will be to detail. Start with the vague emotions you arrived at when outlining the personality of your city and work out from there. What are the most important buildings which dominate the City? Who owns them? Who works or lives in them? Do they reflect the character of the people who live there and the emotive feel you want the city to convey. Each answer you get to your questions gives you a better idea of what your city should look like. I find that I can get the best mental images of my city when I'm lying in bed before I fall asleep. I then put down my ideas on the splatter diagram on my way to work in the mornings. From this mental role playing you can very quickly construct and alter your city to fit the emotive personality you want it to have. Each idea breeds new hooks for other ideas.

On the next page is a splatter diagram I made for the city of Arborea (pictured left). The background to this map is that it was for

use in the the Cartographers' World Building Project, a community project to build a fantasy world. The emotive feel of the map was of a man made stone structure imposing itself on a forest environment. It would be a walled city keeping out the unnamed fears that stalked hidden in the surrounding woodland. The stone contrasts strongly with the natural landscape and the nearby necropolis gives a visual reason for the fears which created the walls. In retrospect the woods look too 'friendly' I should have made them darker to emphasise the feel of keeping out the nameless fear. Politically, the city is divided into wards, the higher the ward, the fewer and larger the buildings, reflecting greater wealth. As I built the city, it occurred to me that the model of a Tuscan walled city would be perfect for the job. So I went onto the Internet and found a map of the city of Montepulciano which I adapted for the purpose.



Fig 1



Splatter Diagram - Example

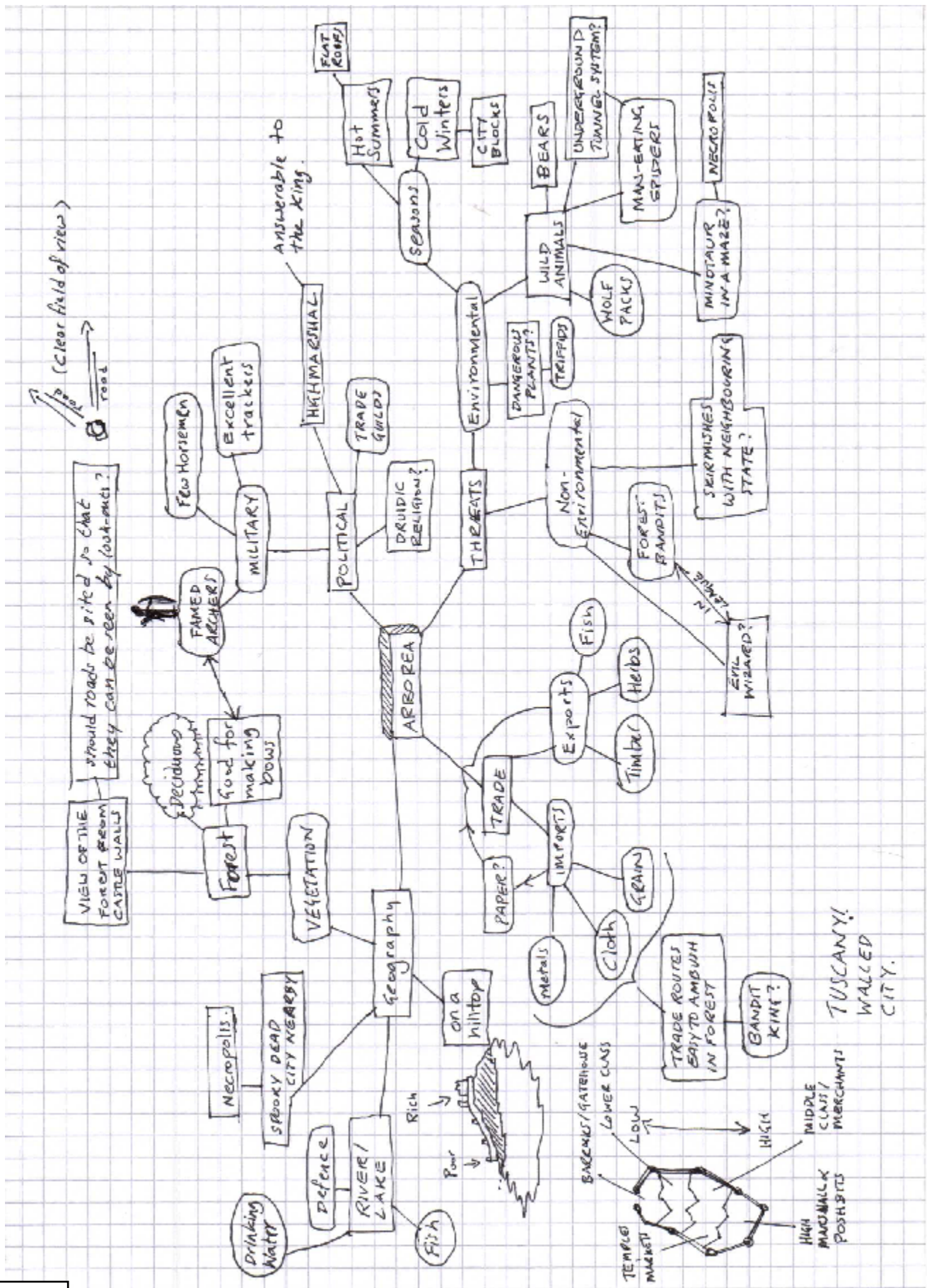


Fig 2



City Archetypes

In order to stamp your city with character it is worth looking at city archetypes. An Archetype gives an immediate understanding of the function of the city and says something about its politics and people. Here are three examples:

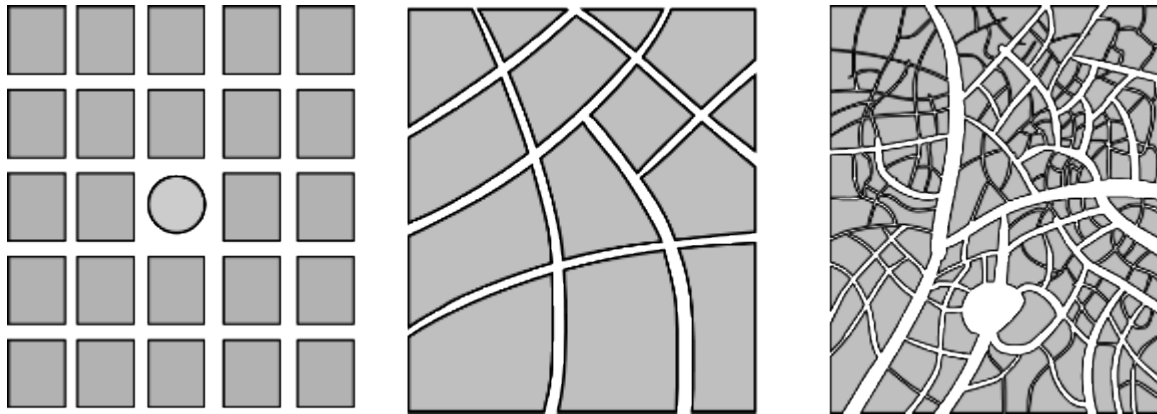


Fig 3

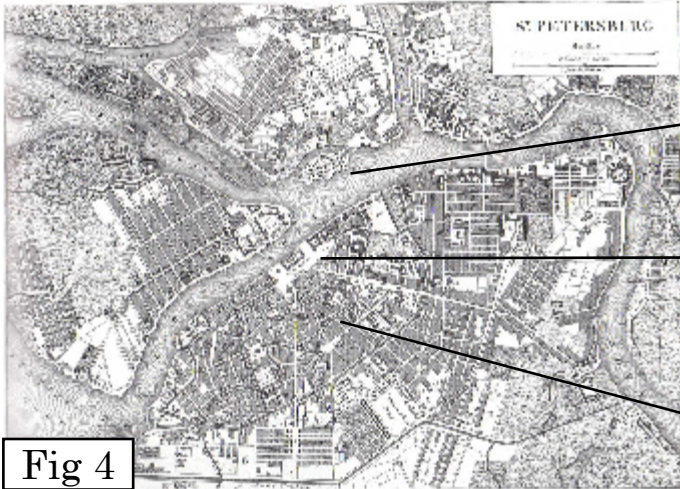
In the first example the buildings are constructed upon a rectilinear grid system, around a centre of importance (the circle). We know the circle is more important because it differs and thus stands out from the other shapes. This type of design suggests strong central planning. It suggests that the city was built all at once and that the people who live in it had no say about where buildings were placed and a dominance over the underlying landscape. Perhaps it was a new city, built by an emperor or perhaps some sort of Romanesque fortification, ordered to be built by a general. In either case it has been planned and we know that it represents an authoritarian society. Grid systems do not have to be rectilinear; any repeated regular pattern will eventually form a grid of sorts. After linear grids, Radial grid cities are most common in real life.

The second example shows streets with curves, suggesting some resonance with the underlying landscape which determine human movement - the easiest way to walk from A to B with the least possible effort is to follow a contour. Some of the streets are straight which suggest central planning. Note that all the streets are of the same width. Here is a city which suggests some central authority but which is built more in harmony with its surroundings and people. Perhaps the authority followed the main existing roads of an unplanned city and imposed some new ones of its own.

In the third example are streets of varying width, their pattern are like veins on a leaf. This is a city which has evolved over time and through a process of accretion. There are still public spaces of importance, for example, the circular negative space stands out. Perhaps this city was once built using formal rules but over time the citizens of the city have encroached into public spaces making them their own with regard to only their local concerns and not some overarching order. Note that the network of streets in the north east corner are more intricate than in the south west. This suggests that the north east is perhaps older and less ordered than the south west, where ad-hoc building has been forbidden by authority. This city map has a sense of history about it. The width, shape and directions of the streets follow no predictable pattern, but they look like they have evolved. A pattern to the streets might become more apparent once more facts are known, for example the underlying landscape, a physical calamity or the locations of centres of commerce.

Fantasy cities, in order to underline their character and personality to aid in story telling, often follow archetypes more closely than cities in reality. Minas Tirith from the Lord of the Rings is ordered and centrally planned, reinforcing the emotive feel that this is a city on a war footing and which is run by a strong central authority. On the other hand in the world of Robert E Howard's Conan, cities are more muddled affairs, often with political power in a constant state of flux. Disputes between factions break the city up into neighbourhoods over which individuals or groups extended varying degrees of influence. A city in Conan's world would not have sat easily in Middle Earth or vice-versa. Always bear in mind the three archetypes when building a fantasy city. A single city may incorporate all three (typically the wealthy areas would be ordered and the less wealthy areas would be more organic). Having a warren of tiny streets to represent poor areas is an often used visual shorthand but it does not necessarily follow that all poor areas should be unplanned and all wealthy areas planned. Think of your city's personality and which archetype best suits it.

City Archetypes - Examples



St Petersburg, circa 1900 - Central Planning

The heart of the city was probably the fortified Island in the centre of the river.

The city has been meticulously planned. Long thoroughfares lead to important buildings and monuments.

The radial and linear grid system adopted by the city planners is evident, but is broken up by the canal system which follows a curving route.

Fig 4



Constantinople, circa 1880 - No Central Planning

The streets follow an organic pattern. The suggestion is that the city is crowded and much of the building is ad-hoc.

The streets on the northern part of the city follow the contours of the hill. Ribbon development is taking place along the river bank.

Note the lack of public space. Only important buildings and monuments have a clear area around them.

Fig 5

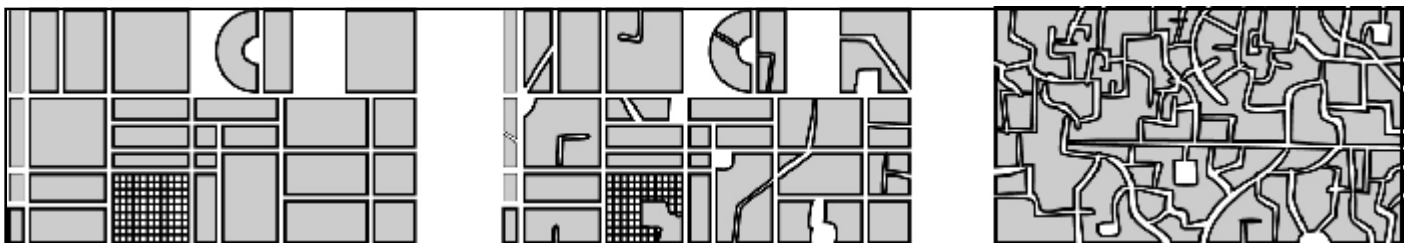


Fig 6

The gradual transformation of a gridded Roman colony into an Islamic city. Left: The solidly framed Roman grid is punctuated by an open-air market and an amphitheatre. Centre: The city's new Islamic population appropriates these public monuments for private use, and mid-block pathways begin to violate the orthogonal street pattern. Right: The transformed city is one with a minimum of open public space. Straight passages along the winding system of narrow lanes offer the merest suggestion of the original layout.

From: The City Shaped, by Spiro Kostof

City Placement

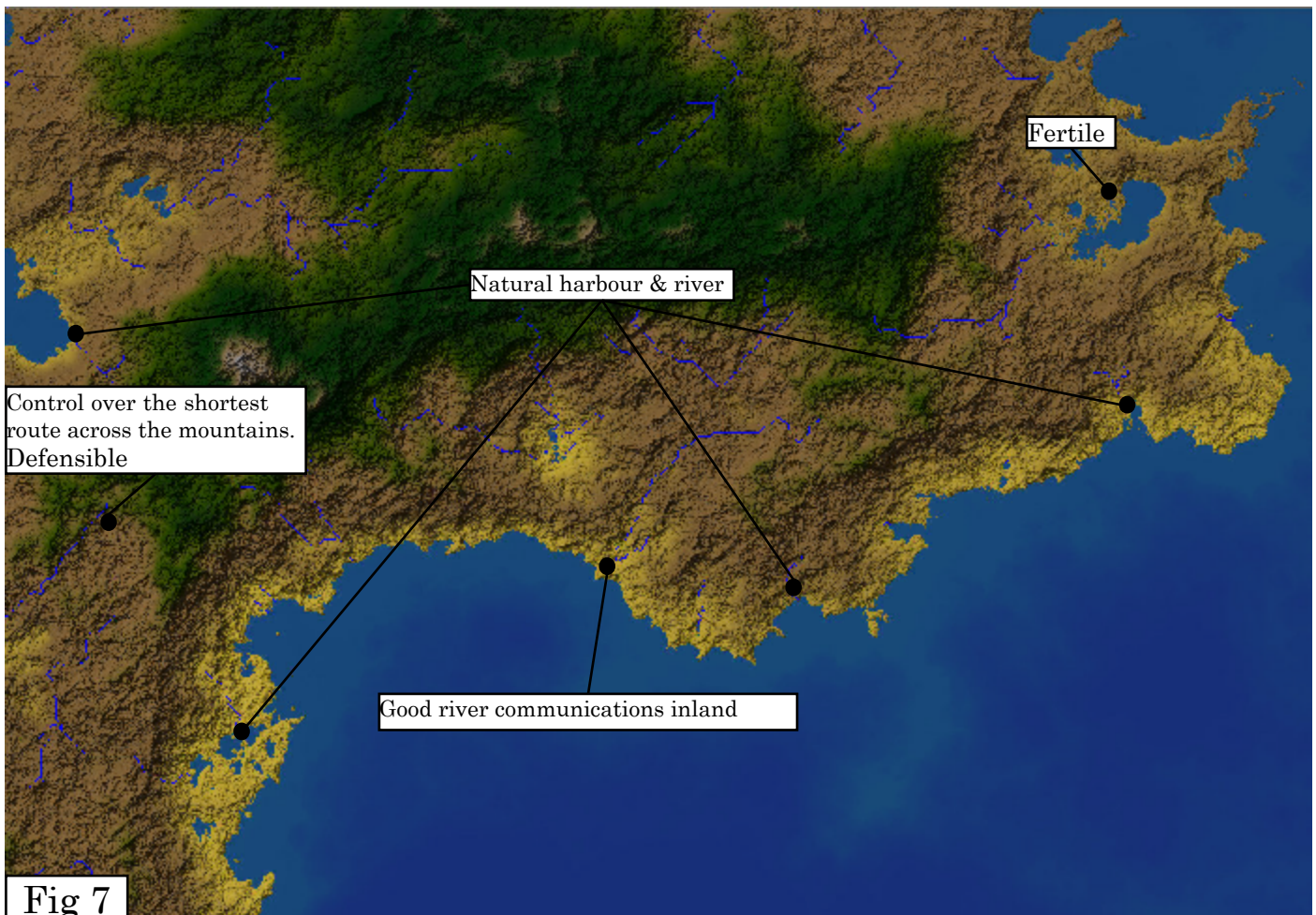
Generally speaking, cities are located at sites which meet one or more of the following criteria:

- Strategic or defensible
- Easily available to trade
- Close to a source of fresh water
- Close to a source of food.

This is why many cities are generally to be found at river estuaries. They are in a position to control traffic moving up river and close to a water source. Alluvial soil is generally fertile which makes for good crop yields and pastureland. Maritime Trade communications are aided by the city's proximity to the sea. London and New York are examples of such cities. On the other hand, Paris and Madrid are located near the centre of France and Spain. At a time when order was imposed by large armies and foreign invasions were relatively common, the central positioning of capital cities meant less time for armies to move to trouble spots and greater security from invasions.

Below is a randomly generated Fractal Terrains map on which I have placed a number of cities together with explanations for their locations. When placing cities on a fantasy map, many factors will come into play, including political boundaries and historical events. Wherever you place your city, make sure that there is a good historical reason for putting it there. Also make sure that the environment works with the personality of the city. Remember that you can always adjust the environment to justify your city placement by, for example, drawing in a river or adding a trade-route. The key is to ensure that your city's location fits effortlessly into the story that you wish to tell.

The location of your city will have a knock-on effect on your city's design. Cities located in mountainous areas are likely to be built to withstand the weather. Owing to its abundance, stone is likely to be the building material used. Similarly, cities built near forests are likely to be constructed of wood which will be abundant and is easier to work.



City Shapes - Topography

As previously mentioned, one factor governing the shape and placement of the elements of a city is the amount of central planning involved in its construction. Another equally important factor is the environment in which the city is built, in particular the topography of the landscape, the climate and the presence or absence of external threats. In the world of fantasy, cities have been built in places not replicated in the real world, for example underground, in trees and floating in the sky. What follows are some thoughts as to how topography determines the general shape of cities in real life, from which it is hoped that the designer can extract principles for use in imaginary cities.

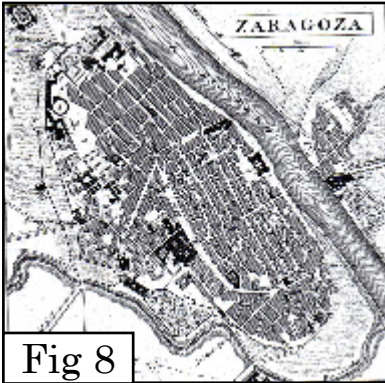


Fig 8

Riverine Cities

Settlements that are built along rivers have some fairly typical features. Initially they are long and thin, following the river's course on one or both banks. The centre of the settlement is usually an area of commerce, like a marketplace or docks. As the settlement grows into a city, it will tend to take a rounder shape (assuming no topographical obstacles such as mountains) as the inhabitants will prefer to be closer to the commercial centre rather than the riverside. Virtually all riverine settlements will have roads that run along the river banks. These are likely to be the oldest roads in the city.

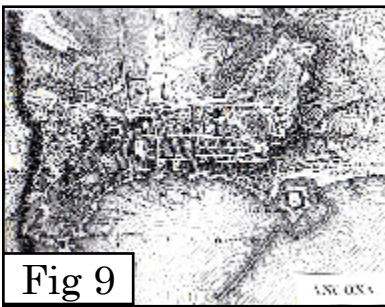


Fig 9

Natural Harbours

Natural harbours often form gentle curves at the base of a topographical bowl which meets the sea. If there is a slope down to the sea, which is often the case, it is common for streets to follow its contour lines. Any settlements are usually crescent shaped with the main area of activity at or near the dockside. If there is a steep slope down to the harbour, then access to the settlement is usually by a single road, passing through the town with habitations built along the line of the road. There is generally more construction at the base of the slope where there is flatter land to build on and which also acts as the commercial centre.

Defensive Cities

Defensive cities are the staple bread and butter of Fantasy RPGs perhaps the most famous example being 'The Keep on the Borderlands'. In reality, walled defences were common in Medieval European and Asian cities where the threat of invasion was a reality, the advent of blitzkrieg tactics and superior artillery made the defensive walls redundant by the First World War. Because of the importance of walled cities in fantasy novels and games, a brief study of city defensive fortifications is dealt with as a separate chapter later in this work. Walled cities do not, as a rule follow a typical shape. Living conditions inside walled cities tend to be crowded with most of the citizens living in apartments and only the very wealthy in houses. Sometimes the city outgrows its walls resulting in a new bounding wall enclosing the old, rather like the rings in the cross section of a tree. Walled cities use topographical features to enhance defence. In the above map of Antwerp, the river Schelde acts as a moat along one edge. The fortified hill towns in Tuscany were a daunting prospect to besiege, being set upon hill tops and with defensive fortifications besides.

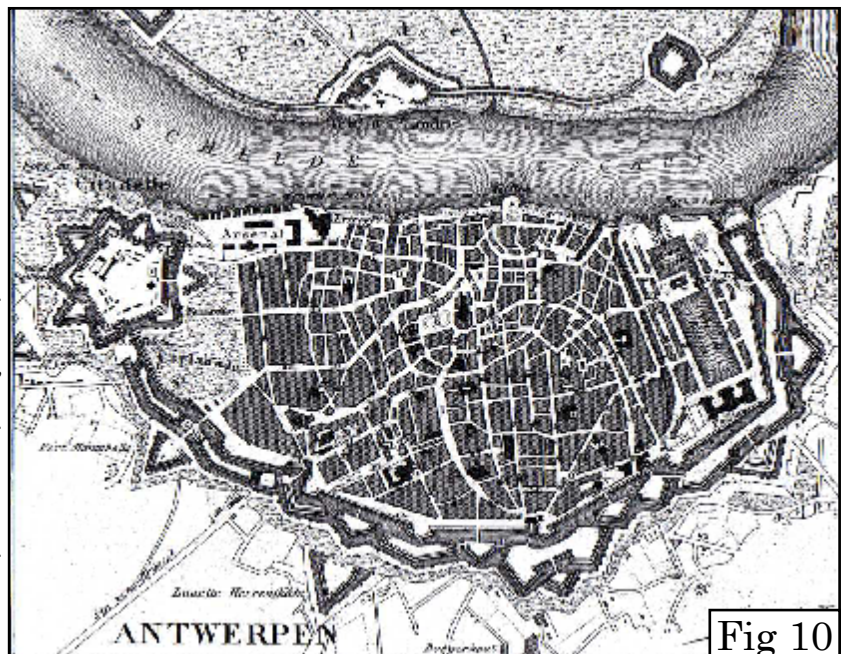


Fig 10

Hilltop and Linear Ridge Cities

Hilltop and linear ridge cities often find their roots as defensive positions. Typical features of such cities are a limited number of entry points (which are often heavily fortified) and often dominance over a geographical means of communication, typically a road, river, bay or mountain pass. Often such cities started as fortresses or castles which expanded over time. Roads and defensive design tended to follow contours, so in the case of linear ridge cities the shape of the city is elongated following the spine of the ridge. With a hilltop city the shape is more rounded. Hilltop and linear ridge cities are among the most dramatic cities built, one only has to visit the Alhambra in Spain or any number of hilltop cities in Northern Italy to understand why. It is for this reason that fantasy cities are often of this type - their dramatic position makes them memorable.

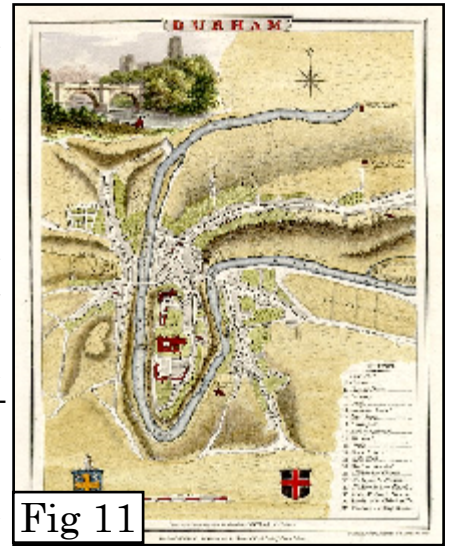


Fig 11

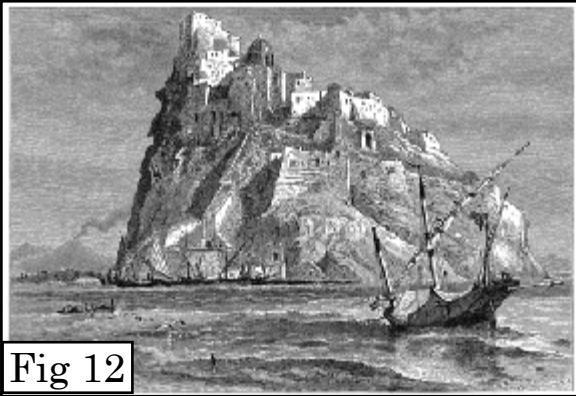


Fig 12

Cities built on hills and ridges often depended on

obtaining their food from the lowlands. Some hill cities in the built in the middle-east had large underground storage tanks or cellars for water. The walls of the city provided a safe refuge and a rallying point in times of war to those living in the lowlands. These cities were a statement of political dominance. Hilltop cities rarely evolve by accretion of smaller settlements, they are usually constructed under the command of a feudal lord.

Desert Cities

Without the advantages of piped, running water from distant places deserts are not suited to urban life in low technology societies, so cities located in deserts should be few and very far between. The size of the city would almost certainly be related to the amount of available water (presumably from an oasis) and food with the individual or group controlling the water source being the most politically or religiously powerful. In a fantasy world of course the rules are more flexible. Vast cities rising out of the open desert make for dramatic settings. Access to underground reservoirs filled by a subterranean river and the presence of a city on a well plied caravan route might provide the food and water justifications for a larger city. In terms of shape, as the topography of a deep desert is generally flat, the city is likely to develop around centres of commerce and along arterial routes, as shown in the adjacent map of modern Timbuktu. Although Timbuktu is built on flat terrain, mountains are not uncommon in the desert and would provide a source of security and perhaps some protection from sandstorms.

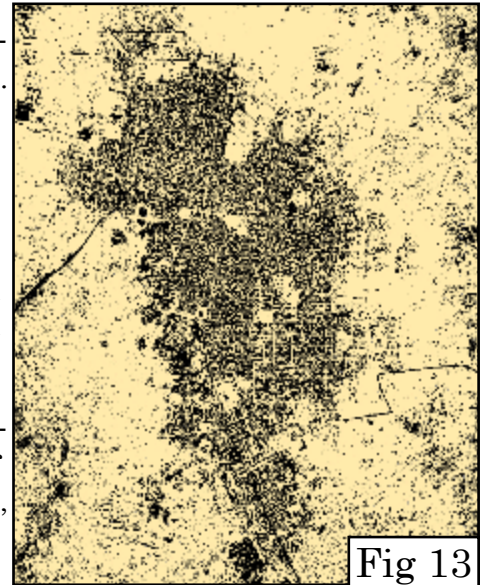


Fig 13

Fantasy Cities

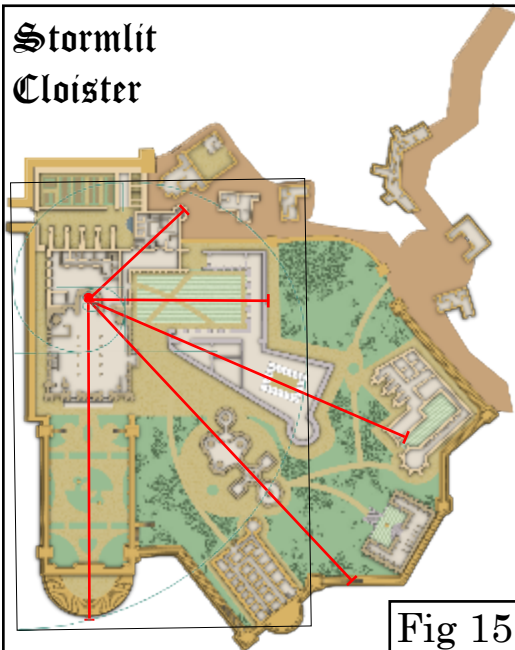
When building fantasy cities, the imagination should not be overly restricted by what is possible in real life. Cities can exist within the trunks and on the boughs of tall forests, or as deep underground complexes. While no real life historical counterparts of such cities exist, think of the principles applied to real cities and apply them to imaginary situation of your city. Ask lots of questions - who are the inhabitants? Is there a need for defence? If so from whom or what? What is the most effective form of defence available by using local materials? Above all think generally how the topography affects your city's shape and plan your city accordingly. By taking into account the shape of the land (or whatever medium your city is built on) your city should acquire a feel that your city is working in harmony with the medium on which it is built.



Fig 14

City Shapes - Axis and Rhythm

For a city to look harmonious, its structure should possess both axes and rhythm. The axes provide the main lines of movement or importance and the rhythm is determined by or determines the size, shape and locations of its focal points. In the map to the left, of the Stormlit Cloister, a number of axes radiate from the alcove in the Grand Hall, suggesting that the Grand Hall is the most important building in the complex and that the alcove is the most important point in the Grand Hall.



The distribution of the buildings around the Main Hall roughly follows a Fibonacci spiral (one of the most pleasing geometric forms to the human eye used by countless architects in the past, present and doubtless future) giving the building distribution a sense of rhythm. In this case the axes are used to suggest importance by leading the eye to a central point. The distribution of buildings leads the eye in a spiral which again is centred on the focal point of the complex.

If the intention is to disturb the harmony, (let us say for example, the Stormlit Cloister had been invaded by destructive -and visually tasteless - Orcs), then it is a simple matter of placing (or destroying) buildings which interrupt the natural rhythm and appear jarring to the eye. Of course such geometry is only readily apparent with a bird's eye view; one which would be impossible to the normal city inhabitant. Nevertheless, the principle is important if the aim to design a city which is centrally planned or pleasing in geometrical

terms. Axis and rhythm apply to cities as much as they do to smaller settlements as the drawings below demonstrate. When designing a city, think about where the main axes lie (usually along an important road) and the points that you will use to define the axes (important buildings, public spaces, grand arches or statues all serve this purpose).

In his book, *Design of Cities*, Edmund Bacon identifies six 'connectors' which relate spaces and structures.



Fig 16.1

Growth by accretion - space as the connector. Although the structures do not follow any form of planning, the angular spaces between them provide the relationship. Negative space in cities normally indicates roads, markets and other open spaces. It is these which bind the buildings together.

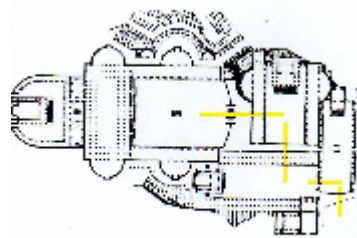


Fig 16.2

Axes as Connectors. The use of axes at right angles to each other indicates a love of order, or some form of tyranny. Here the axes and buildings closely interlock with each other, creating the effect of a large buildings composed of smaller discrete ones.

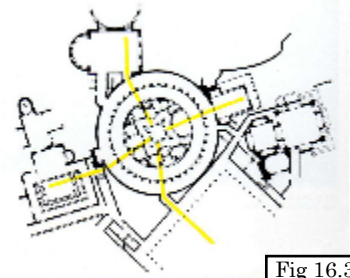


Fig 16.3

Mass as Connector. Here the use of curved structures to create angular relationships creates a number of sub axes emanating radially from a point. The large circular structure becomes the centre of attention.

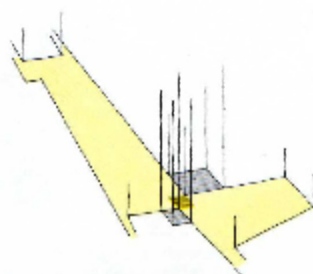


Fig 16.4

Growth by accretion - interlocking space as the connector. During the medieval period, cities often grew around rectangular spaces. In this example the overlap between the two rectangles is cleared and towers are built on the areas indicated in grey, increasing the importance of the junction of the two yellow spaces.

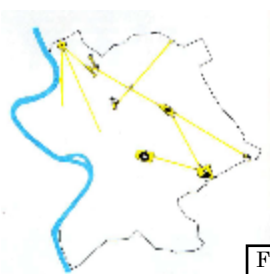


Fig 16.5

Growth by tension. Here we see axes created by city landmarks. Invariably these would be roads of importance which would lead from one important building or space to another. This is the backbone of order established in cities which otherwise grow by accretion. Central planning takes place in a limited areas only.

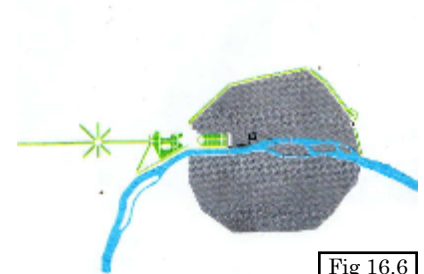


Fig 16.6

Growth by Extension. Here we see how city axes extend from the city to form the spines of new areas of growth. These new settlements are initially positioned outside the city but are oriented in relation to it. Other axes might emanate from the new body created to form sub-settlements or to join with existing towns which support the city.

Positive and Negative Space - Part I

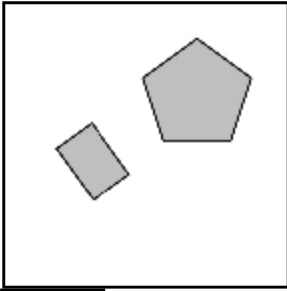


Fig 17.1

Positive Dominant
The pentagon and the rectangle stand off the white background which is ignored. Regular forms with distinct outlines are easily identifiable. The boundaries of the forms are defined by lines, colour and the space around them.

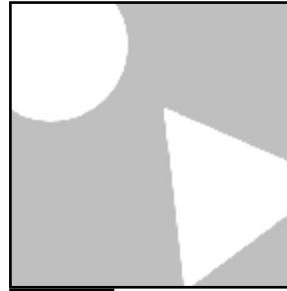


Fig 17.2

Negative Dominant
We ignore the darker colour and see the white cut out shapes of the circle and triangles even though they are not fully formed. While colour can be an indicator of positive space, regular shapes dominate colour.

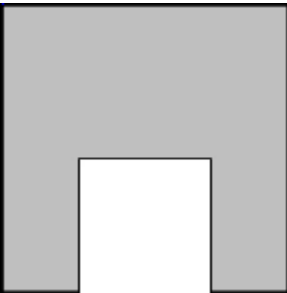


Fig 17.3

Equal Emphasis
It does not require much effort to see a dark square arch or a light square cut out of a dark square. Because the white square is a smaller element and all other factors are equal, we are more inclined to see the dark arch.



Fig 17.4

Equal emphasis
The negative space of the streets created by the house forms are equally as prominent as the house forms themselves. Both are regular shapes in their own way, the streets are lines and the houses are rectangles or rectangular composites.



Fig 17.5

Negative Dominant
In this accretion based, biological city form, the positive dwelling shapes are no longer regular forms, increasing the dominance of the streets and open spaces. In this sort of city, living space is built around roads, resulting in the negative dominance.



Fig 17.6

Equal emphasis
In this section of map the dark and light areas each dominate depending on which elements we perceive as positive or negative. In some sections of the map the buildings define open space and in others the opposite is true.



Fig 17.7

Positive Dominant
The dark buildings stand off the page. Nevertheless the linear boundaries of the garden plots assist in depicting the grid system of roads. Lines can be as important in establishing positive and negative space. The mode of depiction and the colours used also define positive and negative space.



Fig 17.8

Positive Dominant
When only lines are used their boundaries give an indication of positive and negative shapes. Enclosed boundaries tend to suggest buildings (such as the one numbered 18), but the unnumbered polygons to the north may just indicate ownership rather than buildings.

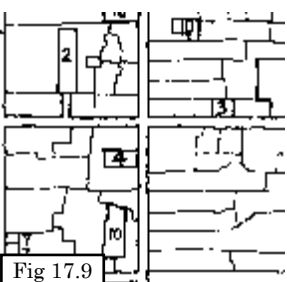


Fig 17.9

Negative Dominant
In this map the regular streets are recognisable. We instinctively know that the boundary lines indicate ownership rather than the existence of buildings except, maybe where numbered.



Fig 17.10

Positive Dominant
Isometric, representational pictures and use of colour immediately emphasise positive space. We know the yellow areas contain buildings although they have not been drawn.

Positive and Negative Space - Part II

On the previous page we saw examples of positive and negative space used on various maps. Understanding and mastering the relationships between positive and negative space is fundamental to producing convincing cities. The boundaries of closed and open space define each other. In some areas of a city, open spaces will be the dominant element, recognisable by their regular forms. On other areas buildings will be dominant, again recognisable by regular forms.

Understanding positive and negative space can serve to emphasise important parts of your city and define points which make up the city's axes. Generally speaking the more crowded and built up a city gets, the more negative space takes ascendance. Cities which are centrally planned will allow for large open spaces to define the form of buildings in them, such as palaces and monuments. Most of the time however, positive and negative space will vie with each other, with each dominating various parts of your city, giving it a vibrant and convincing air of reality.



Fig 18

Positive and negative spaces also exist in the third dimension, and will help to shape your city's skyline. Making a city memorable requires it to have a 'grand statement'. Modern city planners know this. The skyline of Paris would not be the same without the Eiffel Tower, London has Big Ben, and more recently the London Eye. Kuala Lumpur, the Petronas Towers. Florence, pictured on the right is recognisable by the outline of the Basilica di Santa Maria del Fiore. The sky is a blank canvas of negative space upon which the character of a city can be carved and makes the city recognisable from afar. We will return later to the 'grand statement' of a city to cover it in more detail. In the context of vertical grand statements, sadly unless one wishes to map a city in isometrics, depicting vertical positive and negative space is difficult, but it should not be ignored. The vertical element of a city is as fundamental a part of its character as a plan map of it and should not be neglected in a city's design.

One useful way of arriving at positive and negative spaces is to interlock shapes as illustrated by the drawings below. Any vector software (such as inkscape) should be able to perform these functions.

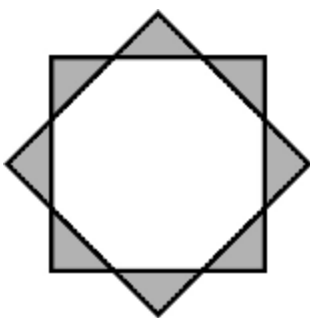


Fig 19.1

Rotation



Fig 19.2

Penetration

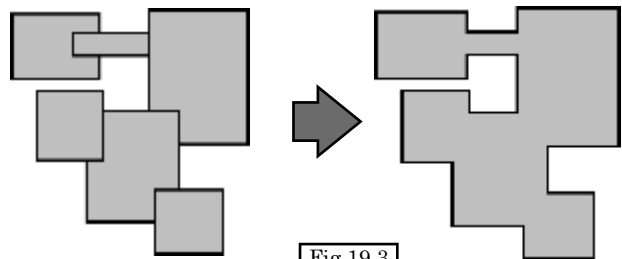


Fig 19.3

Addition

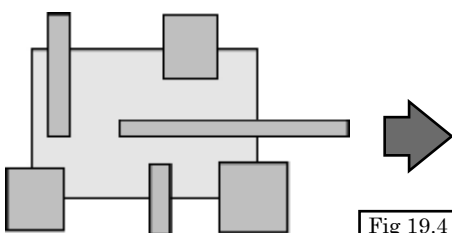


Fig 19.4

Subtraction

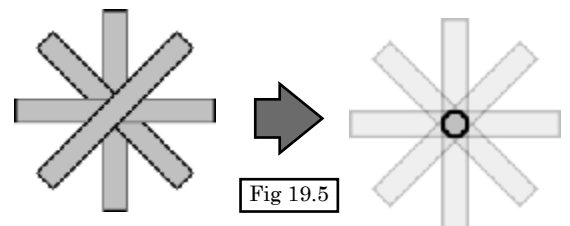


Fig 19.5

Intersection

Scale, Size and Detail

- Scale:** A ratio which compares a measurement on a map to the actual distance between locations identified on the map. E.g. 1:25000
- Size:** The dimensions of the physical document on which the map is drawn. E.g. 10 inches by 8 inches.
- Detail:** The amount of information contained on the map.

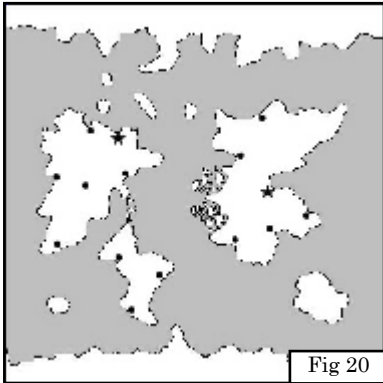


Fig 20

The map in Fig 20 is at a very small scale and the actual dimensions of it are tiny (some 2 square inches). There is only room to show the most major city features.

The map in Fig 21 is also at a small scale but its size has been substantially reduced to about 2 square inches so that the detail is illegible. This map should be depicted at a size of about 14 inches square to be legible.



Fig 21

Some consideration of matters of scale, size and detail are essential before setting out to draw a city map. An overly detailed map at a very small scale and size results in a loss of detail (see Fig 21). Similarly a large scale map which has insufficient detail may look sparse and incomplete (see Fig 20). Different styles of objects on the map therefore lend themselves better to different scales.



Fig 22

One can usually tell by eye as to whether the size to detail ratio of a map is acceptable. If the detail on the map is too crowded for the map to remain legible, then the size to detail ratio should be examined again and the more minor details omitted.

Hatching (see Fig. 22) is a common way to denote buildings when mapping a city at a scale at which detail of individual buildings will be lost at the size at which the map is depicted. At larger scales individual buildings can be drawn, but this will have the consequent effect of requiring a large sized map to accommodate the entire city (see Fig 23).

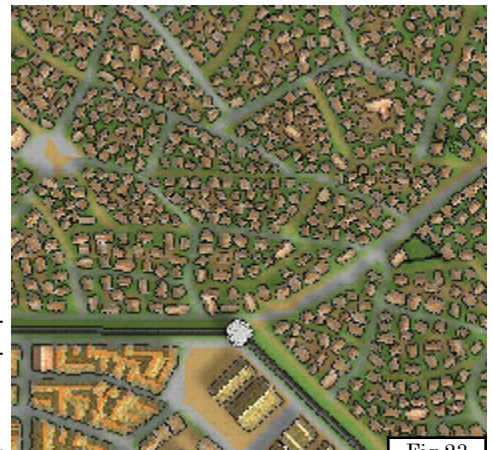


Fig 23

Achieving a pleasing combination of Scale, size and detail is largely a matter of using one's eye. Bear in mind that if you wish to encompass an entire city on one map than the larger the scale employed, the larger the size of the map must be and generally the more detail it must contain. This means an enormous increase in time and effort. Mapping cities in the style used in Fig 23 is not for the impatient. Software (in this case Profantasy's City Designer) can help to an extent but ultimately, each building on the map will need to be arranged by hand. The results can look spectacular but maps such of these often involve days of effort to complete.

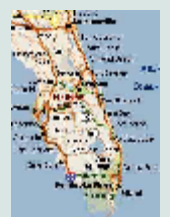
When starting a city map have in mind any two of the elements of Scale, size and detail. The third element will usually take care of itself. For example, if I wish to create a map of a city at a scale of 1:1000 (i.e. one cm = 10 metres), and I wish to have the map detailed to the extent that the gables on every roof can be seen, then if my city is 500 metres square, it will mean having to create a document size of something in the order of 50 cm square.

Large Scale and Small Scale

These terms can sometimes be confusing. An easy way to remember which is which is that in a large scale map, objects appear relatively large. In a small scale map they appear relatively small.



Florida
Small Scale



Florida
Large Scale

An ornate, symmetrical decorative frame with intricate scrollwork and floral motifs, surrounding the central text. The frame is composed of multiple concentric lines and features elaborate flourishes at the top, bottom, and sides.

Part II
City Elements

Neighbourhoods

Cities are rarely composed of a uniform set of buildings each of about the same size, shape, colour and decoration. Similarly, roads are rarely all of the same width in a city. It is the variation of all of these elements, together with the size and function of public spaces that are the key indicators in denoting the character of neighbourhoods. People who inhabit cities are generally drawn to live areas of people who are like them, whether they share the same professions, income or lack of it. Public spaces, be they the park, marketplace, forum, square or road usually provide boundaries between neighbourhoods. Figure 24 is a good example of how neighbourhoods in a fantasy city might be delimited.

Each city block, edged by roads, in the middle class areas of Fogdown could easily serve as an area where groups of a similar profession might live and work for example armourers, tanners, smiths etc. The neighbourhood in the bottom right area clearly houses the more wealthy residents of the city. The concentration of larger buildings is greater here and there is more green space. It is interesting also that the Poor Area and the wealthy area are as far apart as they can be. Perhaps one reason why the wealthy neighbourhood is to the south is because the prevailing wind is also from the south which means that any smell travels in the northward direction.

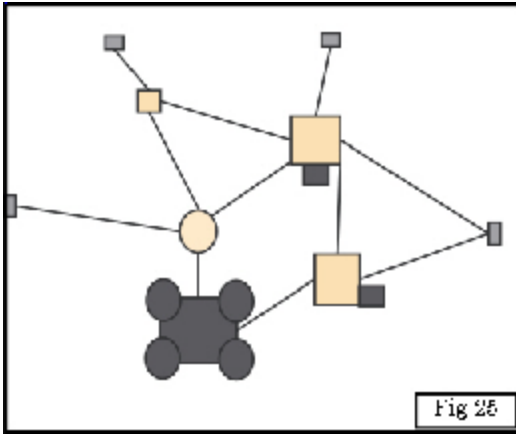
Usually one would expect the wealthier areas to be on higher ground: cleaner air, more defensible, harder to access and with a more commanding view, but there may be 'in game' reasons why this is not so in Fogdown. To the west the architecture and layout of the buildings suggests some sort of warehouse district. The buildings are uniform, long and thin. A scattering of smaller buildings near them suggests some sort of poorly constructed worker's housing. It would be an easy task to divide up Fogdown into distinct neighbourhoods by labelling them as such. The design of the city and the elements in it lend themselves to such divisions. This makes the map coherent and therefore believable.



Public Buildings and Public Spaces

As Nodal Points

There are certain staple elements that every fantasy city seems to possess in the way of public buildings and spaces modelled, as they usually are, on Western European medieval principles. These positive and negative elements are important because, among other functions they serve as nodal points within the city. Having coherent nodal points gives a city a more definite character. A small city will serve as an example. Figure 25



shows a schematic of a simple city in which the public spaces (in light orange), the city gates (the small rectangles on the perimeter), the castle and large inns (the small dark grey rectangles adjoining the squares) have been placed and joined with straight lines to indicate the most obvious road systems which would join these elements. From here it becomes a simple matter to begin to map the city in overview and then to add the detail once the overview is complete. The presence of rivers, hills, and other topographical limiters, together with man made historical events will all have an effect on where nodal points are placed and the final character of the city. Working in this way one can ensure that the 'bones' of the city are located before the flesh is laid on top of them. The major question that should be asked as the elements are laid down is, 'Does this element reflect the character of the city I am trying to build?'

A Sample list of Staple Western European Fantasy Public Spaces:

Public Buildings

Castles / Keeps
 Temples / Churches
 Inns and Taverns
 Cartographer's Office (!)
 Functionaries' offices
 Barracks
 Gatehouses
 Hospitals
 Bath Houses
 Town Halls
 Abandoned Buildings
 Docks
 Arenas
 Guild Halls
 Stables
 Banks

Public Spaces

Market Squares / Bazaars
 Parks / Greens
 Cemeteries
 Monuments / Statues
 Farms / Fields
 Roads
 Fora (Forums)
 Archery Butts
 Wells
 Unbuilt areas

Note that public buildings are not necessarily buildings in which the public might be allowed without permission but are buildings of public importance. It is these buildings and the spaces that accompany them which help to define the character of the city itself and the neighbourhoods within it. Their absence or presence and the relative number of them in comparison to other areas of the city will begin to define the character of an area. A large bazaar surrounded by a mass of hovels would sell very different items to a large market surrounded by large houses inhabited by the well-to-do. A temple in a poor area is likely to be of a different nature to a temple in a rich one. So it can be seen that although to an extent the public buildings and spaces set the tone of an area, likewise, what surrounds those buildings and spaces define its context too. The guild of thieves would not have its headquarters in a rich suburb any more than the the Guild of Jewellers have theirs in a poor one.

None of these rules, of course are written in stone, and if the character of your city demands it, it may be consistent to place the administrative centre of the city in one of the poorest areas (perhaps the leader wishes to help the poor or perhaps he requires slave labour). Many useful adventure hooks can be derived by placing buildings in unexpected places, always providing of course that there is a good 'in game' reason for doing so. Experiment as to which buildings to place where, but always have a purpose when you do.

Bibliography

Bibliography

Kostoff, Spiro. The City Shaped. Thames & Hudson, 2006.

Bacon, Edmund. Design of Cities. Thames & Hudson, 1978

Rykwert, Joseph. The Idea of a Town. Faber and Faber, 1976

Ching, Francis. Architecture: Form, Space and Order. John Wiley & Sons, 1996

Carmona et al. Public Places Urban Spaces. Architectural Press, 2003

Illustrations not created by the Author

Figures 4, 5, 8, 9, 10, 17.6

Heck, J.G. Heck's Pictorial Archive of Military Science, Geography and History. Dover 1994

Figures 16.1 - 16.6

Bacon, Edmund. Design of Cities. Thames & Hudson, 1978

Figures 17.7 - 17.10

Van Roojen, Pippin. The Agile Rabbit Book of Historical and Curious Maps. Pepin Press 2005

Figure 11

J. Roper and Cole, George (engraver.). The British Atlas. 1810

Reproduced at:

http://freepages.genealogy.rootsweb.ancestry.com/~genmaps/genfiles/COU_files/ENG/DUR/cole-roper_durham_1810.html

Figures 12 & 14

Various. Castles CD ROM and Book. Dover, 2007

Figure 13

Google Earth (Timbuktu).

Figure 22

A New Map of North America, From the Latest Discoveries. 1778. Engrav'd for Carver's Travels. From the David Rumsey online map collection: <http://www.davidrumsey.com/index.html>.

Figure 23

Sirilion by Gandwarf. The Cartographers' Guild:

<http://forum.cartographersguild.com/showthread.php?t=3497>

Figure 24

Fogdown by Redstar. The Cartographers' Guild:

<http://forum.cartographersguild.com/showthread.php?t=3044>