Note: This is a rough explanation of the information we have to gather for our analysis of the physical characteristics of our site. Although this particular article refers to placing a building on a site, the general information from a site applies also to the analysis for the park.

SITE ANALYSIS - THINGS TO CONSIDER By SUJITH.G.S

The site visit is one of the first things in the design process. After the completion of a site visit, a detailed site analysis has to be done so as to really grasp the features of the site, which will be very important during the design. Here are some of the points one must pay attention during the site visit as well as during the site analysis and study -

Location –

This is the first thing that one needs to look at. Where is the site located? How is the site approached? What is the name of the street, the road etc on which the site is located? How far away is the major junction?

Orientation –

The orientation of the site plays a very important role in siting of the building. This, when combined with the wind direction and sun path, would give a good idea as to how the design should be oriented so as to optimise the design. The orientation along with the sunpath will also determine the placement of rooms inside buildings. For instance, in a warm tropical climate, the bedrooms will be placed such that they are not facing the west or the south.

Temperature & Sun path –

The average temperature of the area, as well as the monthly average temperature has to be studied to determine the temperature range and the fluctuations, which will impact the design.

The sun path direction tells one which will be the side from which the maximum heat will be coming, especially in the afternoons. In warmer climates, the design will try to reduce the amount of incident sunlight so as to reduce the heat intake to a minimum. The lesser surface area of the building which is exposed to the sun, lesser will be the conductive heating.

In colder climates, the design will try to maximise the amount of sunlight incident on the building so as to have maximum warmth as possible.

Wind direction –

Most of the locations will have a general major direction from which the wind comes. However, this will not always hold true and will vary from location to location. If we are to design a climatologically responsive building, it will be important to consider the direction of the wind so that it can be channelized through the interiors. This will play a major role in placement & size of openings.

The thing to be remembered is that the wind direction may vary from place to place inside the site itself and thus have to be checked from a few different places especially if it is a large site.

Soil type & condition –

Soils vary from place to place. Their properties also vary according to the type of soil. Sandy soil, clayey soil, laterite etc, all have different properties, which affect the design of the building. This is very important from a structural point of view while designing buildings. The safe load bearing capacity of the soil is to be found out after which the structural system and the foundations will be designed accordingly.

Some soils have peculiar properties. The Black cotton soil for example, is perfectly normal when in a dry state. However, as soon as it comes in contact with water, it starts to expand, which will have a very adverse effect on any building designed on it. Thus, it is important to be aware of these characteristics to avoid problems in future.

Topography –

Topography refers to the slope and level of the land – whether the land is flat and plain, or whether it is sloping? From a design point of view, a sloping site will be more challenging. If a site is sloping, the exact slope can be interpreted from a detailed Contour map. The contour locations and spacing of contours will play a big role in the siting of the building. It is always better to design buildings along with the contours, integrating it into the design to reduce unnecessary cutting and filling of soil.

Also, during the site visit, it is important to check out the stability of the slopes – whether the slopes are solid enough to permit construction on it.

Vegetation & natural features –

The natural vegetation present on the site is very important. Any good design will integrate it into the design, highlight & accentuate it to create a harmonious whole. The vegetation will consist of all the trees, flora and fauna present on the site. These should me marked onto the site plan so that it will assist during the design stage. Along with the location, the type of trees, the size of the trees, diameter or spread of the branches, heights etc are to be identified. Different trees have different characteristics – the spread of leaves, the speed of growth, the spread of roots, falling of leaves, water requirement, soil nourishment etc. All these features will vary from tree to tree and will also play a major role in the design.

Along with trees and vegetation, other natural features like rock formations, swamps, marshes etc. are also to be identified.

Precipitation & Hydrology –

The amount of rainfall that the site receives and also the time period during which the rainfall occurs are to be found out. The average annual rainfall, often measured in mm, gives you an idea about the precipitation happening throughout the year.
It is also important to study the water drainage pattern in the site - whether it stagnates, or if it flows following the natural slope, this has to be analysed to incorporate in the design.

The Relative Humidity of the place also has to be found out to determine the moisture content in the atmosphere. A higher relative humidity suggests a humid climate, for which cross circulation of wind at the body level is a must for comfort. A lower relative humidity will suggest a dry climate.

Hydrology, as the name suggests, refers to things related to water. During the site visit, we need to identify water bodies present in and around the site like ponds, lakes, rivers etc. The location and size of these water bodies should be studied so that they can be integrated into the design scheme. The presence of water can lead to reduction in the overall temperatures. It will also affect the moisture content in the atmosphere. One thing to be checked is whether there is any excessive glare present.

The water table is another very important feature in any site study. This refers to the level below the soil at which water is present. For areas close to water bodies, the water table may be very shallow. A shallow water table will affect the stability of foundations and additional precautions will have to be taken.

Infrastructure facilities –

This refers to the services present in the location. The major things to be considered are the water supply, drainage connection, waste disposal, electricity supply etc. These are important while planning the zoning in the site.

Surrounding landuses & buildings –

One also needs to pay attention to the surrounding landuses and building around the site. If the landuses are incompatible, it may lead to creation of issues in the design. For example, if there is a school right next to the site, the noise disturbance will have to be factored in while designing. Also, the height and setbacks of adjacent buildings are important in affecting the flow of air and also sunlight.

Prominent Vision lines / Visual linkages –

This becomes a very important element in the design process. The views to the site as well as the views from the site are to be carefully considered while designing.

Locally available resources -

One also needs to find out what the locally available resources are. What materials are available in and

around the site, which can be used in the design. This is especially relevant today when the design has to be as sustainable as possible, by reducing the transportation energy & costs.