

As a practising Architect, I have often been confounded by my clients' blind faith in the Vastu Shastras – the ancient building code of India. In the mid-1990s, when I finally decided to take a closer look at this phenomenon I found, to my surprise, that when seen in totality, it conflicted very little with my professional training. The Vastu Shastras were basically, rules for holistic architecture. That, however, was only the good news.

The bad news was, that it had been turned into a monster of superstition by a number of so-called experts who crawled out of the woodwork to prey on people's insecurities and make a very fast buck.

This little booklet was written because the non-professional has no way of understanding the first thing about these ancient texts. It explains, in simple terms, the origins and meaning of the Vastu Shastras.

While a subject as broad as this can hardly be covered in a handful of pages, reading them carefully will change the way you view Vastu. For one thing, you will realise that it is not something to be feared but, rather, to be looked at objectively and used for your own well-being.

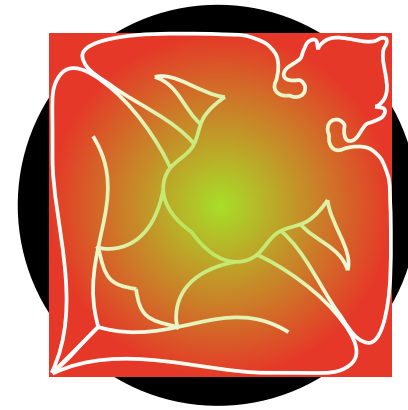
Disclaimer:

I am NOT—and I've never claimed to be—an expert on Vastu. The book I have written is my personal understanding and interpretation of the subject. I have received rude mail from self-styled gurus who tell me that I am an ignorant imbecile. So, to all people who may be bothered by this book (and the damage it does to your business) I can only say: you have your beliefs and I have mine.

Of course, I believe I'm the one who is right...

Rational Vastu 2.0

The Science of Sustainability



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Architect & Designer

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Introduction

Towards the end of the last century, there was a sudden surge of interest in the Vastu Shastras. People seemed to have rediscovered a universal cure for everything that plagued them. Now, all they needed to do, was to make a few changes to their home or office layout and—overnight—they would have all the health, wealth and happiness that they craved.

In response to this trend, a number of so-called experts emerged — promising miracles. At one time they used to give the prospective client a long list of “case-studies” where obeisance to the rules of Vastu had lead to a wonderful life and, ignoring those same rules had invited poverty, death and even the loss of political power.

The scientific roots of Vastu have been rotted away by outright fear-mongering & rank superstition

A person asking the Vastu Pundit for the rationale behind his advice, would be given some pseudo-scientific reasons wrapped in an impenetrable shell of mumbo-jumbo. An accurate word for all this, would be obfuscation. Please note: I am not calling the Vastu Shilpa Shastra as a whole pseudo-science — quite the contrary! However, although its roots are based in fact and logic, it has somehow been turned into nothing short of superstition.

Today, something similar is happening again — this time with sustainable design. Everything from slippers to steel bars are advertised as “green products” and we are seeing a whole new kind of obfuscation. In this second iteration of the Vastu Shastra book, I will—in addition to talking about the origins of the science—be describing how the rules of Vastu are closely intertwined with green building and sustainability.

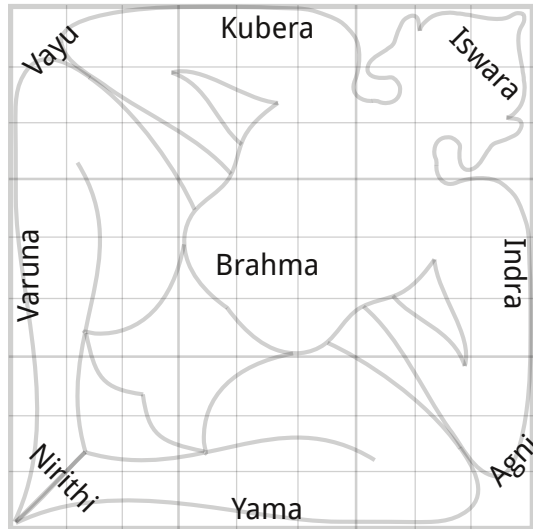
Greenwashing is the latest kind of obfuscation

The Vastu rules are excellent as guidelines for designing spaces that are private, comfortable, low-energy and which maximise the usage of space & material. In these days of relative plenty—we have electricity to run fans and lights, water that is piped to our bathrooms and disposable income to fuel our quest for weekend homes—some of the gains we make by designing sustainably may seem trivial. But let us never underestimate the power of doing our little bit. For example, if a tap drips just a single drop of water every second, it will have in one year, wasted 8,000 litres of that precious liquid.

If the design of a home, office—or any other place where one has to spend a substantial amount of time—takes the local climatic & weather conditions into account, the resultant spaces usually just “feel good”. It's almost impossible to pin-point what exactly makes them so comfortable but we know, instinctively, when they do. Vastu designed houses invariably have the same effect since they are, essentially, designed for climate-responsiveness.

Many people do not realise that the benefits are more than financial. A well-designed place is one that is pleasant to inhabit — even when the darn electricity fails! I've known of houses so dependant on artificial light & ventilation, that even in pleasant weather it can still be dark & stuffy inside — unless the power is full on.

32 Gods | The Legend of Purusha Mandala



granary	treasury	puja
shed	courtyard	living bath
dining		bath
study	sleeping	food store
clothes		pantry
tools		kitchen

Legend has it that a gigantic demon, Vastu Purusha, arose from a drop of Shiva's sweat and ravaged the world. In their desperation, the gods got together and collectively pinned him down, thus saving the world and bringing about order where there was chaos. Each of the gods was assigned a specific seat or "pada", with Brahma occupying the centre and 32 deities placed in the peripheral squares, according to their importance. The Mandala is a cosmic diagram of the subjugated Purusha and shows him with his head towards the North-East and his feet towards the South-West.

The legend of the demon Vastu Purusha and his eventual subjugation by various gods, was a beautifully laid out metaphor to illustrate how one should plan a house. The Mandala, like the one on the left, usually comprised 81 squares, though the number could as well have been 64.

Not surprisingly, the positions of the different gods in the Mandala are the basis for related activities in the house. For example, since Agni, the god of fire inhabits the South-East corner, that is considered the ideal place to have a kitchen. Brahma, the supreme being who inhabits the large central square, is also representative of the dimension above ground level. This portion is therefore left open to sky as a courtyard - a very practical way of ensuring adequate light and ventilation within the dwelling. The courtyard in general, is almost always cool and shaded, so becoming the focus of all household activity.

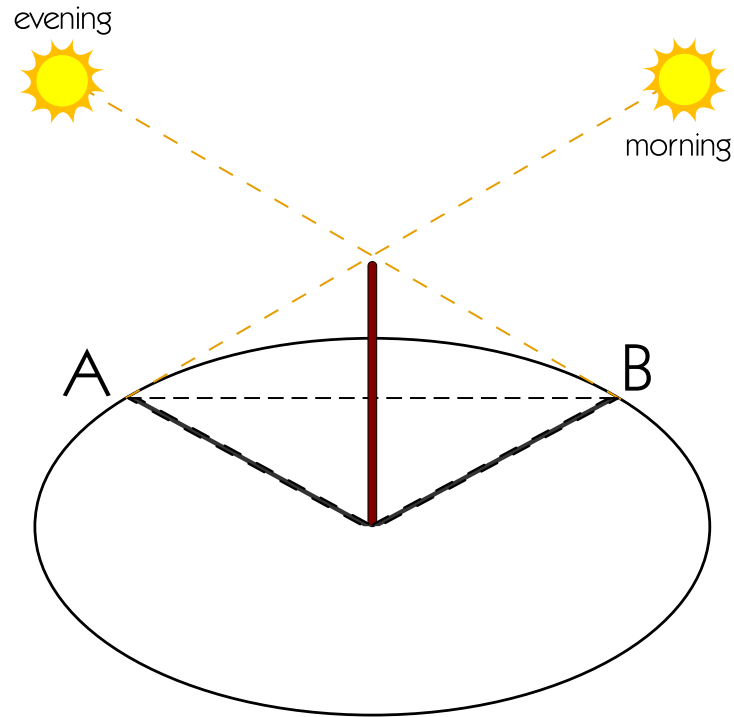
The number of squares in the Mandala follow a geometric progression of 1, 4, 9, 16, 25, 36, 49, 64, 81,... This goes on till 1024 (which is, incidentally, the square of 32 and used for town-planning). The usual numbers for residential structures are 64, or the more popular, 81.

The Mandala provided a useful grid for the Sthapati, or mason-architect, to assign specific locations to different rooms and also helped him in determining their relative proportions. The measurements were made in anthropomorphic units like "angula" (finger) or "hasta" (hand); a system that is slightly out-of-place, when the materials we buy today are quantified in inches or centimetres.

The [PMK] bungalow in Pune was built as per Vastu not just in layout but materials too. Lime was used instead of cement.

Diagrams like the one on the left were merely starting points for the Sthapatis because the spaces were in the most logical position for their purpose. From there, he could modify the plan based on requirements, site conditions and even the client's horoscope. Today, everybody wants a one-size-fits-all solution but that's not how it's supposed to work!

The Coming of the Aryans



THE GNOMONIC COMPASS

DETERMINING CARDINAL DIRECTIONS IN VEDIC TIMES

A "gnomon" or pole was erected in the middle of the site and a circle of radius equal to the height of the pole drawn in the ground around it. A point was marked when the shadow touched the circle in the morning (point 'A') and in the evening (point 'B'). Joining these two points gave the East-West axis. After that it was a matter of simple geometry to arrive at the remaining two directions.

When the Aryans occupied the Indian subcontinent, they had three things that were alien to the bronze-age Indus Valley Civilisation. They rode horses, they used iron and most importantly, they had the Vedas. These volumes of knowledge were passed down orally for generations, until the advent of the Sanskrit script. The fourth book – the Atharvaveda—which includes the Vastu Shastras—was compiled when the semi-nomadic Aryans began to settle into an agrarian way of life.

With the passage of time, the early settlements coagulated into larger villages and then towns. It was probably at this stage that the Vastu Shastras were incorporated into the Atharva Veda, so as to provide uniformity in the overall scheme of things. The people in those days—unlike our modern urban populace—built their own dwellings. No contractor, engineer or architect was required. Their home was a simple affair of timber frame, mud-brick walls and a thatched roof. The Vastu code provided a framework for safe, efficient building work.

The Shastras advised the potential house-builder on everything, right from locating the site, to getting the correct consistency of mud for building and plastering the walls. It taught him what kind of soil would bear the load of the structure and how to find the cardinal directions. Besides, a whole gamut of mantras and pujas associated with the process of building were included.

During the early Vedic period, the Vastu Shastras were flexible and allowed for variations based on individual requirement and local conditions. During the later Vedic period, however, they crystallised into a set of hard and fast rules known only to the pandits and sthapatis. And that was when the obfuscation began...

Today, we have hand-held compasses and GPS to instantly show us our directions. However, unless the GPS system is calibrated to take magnetic declination* into account, this can be quite misleading from the climatic point of view because solar and magnetic North hardly ever coincide. While the discrepancy in most parts of India is relatively minor (between 0 and 2°), in some parts of the world—especially closer to the poles—the difference is quite marked. But why is all this important?

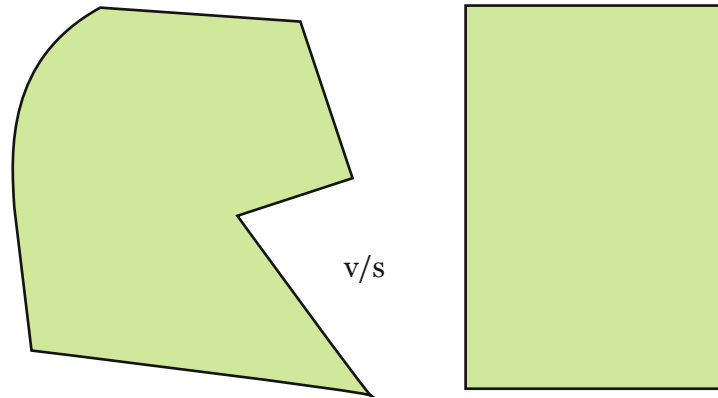
See the [\[PSah\] factory project](#) where sun-studies played a vital role in the overall design process.

The Vastu Shastras are, to a large extent, based on climate responsiveness. Today, I am able to create virtual models where the computer can predict shadows and heat build-up for any given day and time in the year. However, the accuracy depends on the data being correct in the first place. And if the direction is, say, 10° off, that isn't very much use, is it? And that is not all.

The magnetic pole of the earth is in constant, flux so the declination also varies greatly over time. Have a look at [this animated image](#) to understand how mercurial the magnetic North really is.

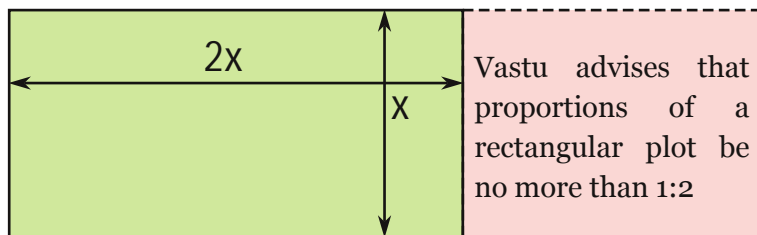
* declination is the angular difference between magnetic North and true North.

First Principles | Choose a Good Plot



THE PROBLEMS OF ODD-SHAPED PLOTS

It doesn't take a genius to figure out which of these two plots drawn above is more practical. Admittedly, the one on the left is exaggerated in its oddness but, it does serve to illustrate the point. I must reiterate though, that on large parcels of single-owner property, this will not matter nearly as much.



Unless the land is excessively narrow, don't take the 1:2 ratio too much to heart. Take the opportunity to landscape it & learn to live with some open space.

Taking a wider view, odd-shaped plots make for twisted roads & highly inefficient land-use patterns.

Let us begin by learning how to choose a good site for, say, a house. The developer or agent will praise the plot like it is heaven on earth. You, on the other hand, are seriously wondering whether you should sink your hard-earned money into this property — not least because you want your children to spend their weekends outdoors and away from addictive electronic gadgets.

Common sense will tell you that, unless your plot is very large, you should choose one of a relatively regular shape. An odd-shaped plot is not only difficult to survey and demarcate but, if it is small, also difficult to design for. Besides, in all likelihood, the chap next door has already incorporated some of your land into his. This is, perhaps, one of the reasons that Vastu warns of odd shaped and triangular plots leading to litigation.

But there is more to it all than just the shape. Vastu advocates that land not have too much of a slope and, to an extent, I would agree. We must remember that, despite the advent of modern materials and engineering, building on steep slopes continues to be fraught with the danger of landslides & structural collapse. Having said that, we are in a position today to actually use sloping land to create wonderful designs and useful spaces. An example of a project that maximised the slope is the [\[RaBV\] bungalow](#) at Karjat.

Now the Shastras advise that the slope always be from South to North and from West to East. We will look at the reasons for this “rule” in greater detail in the next chapter but, in my opinion, there are many ways to get around the problem of a “bad” slope through good design. Of course no Vastu “expert” worth his magnetic compass will allow you to see that as a viable option.

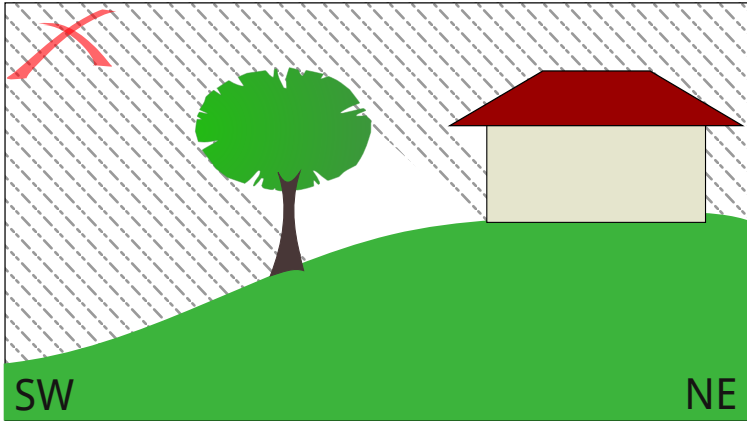
Then there is the question of access to water. Everyone knows that this colourless, tasteless liquid, is essential for life — but in the rush to buy cheap land, urban folk often assume it will be available at the turn of a tap. Welcome to the countryside!

Many a city-slicker has had to abandon plans for a weekend getaway because of an acute water shortage. They are shown the property during or just after the monsoons, when everything is lush & green with little streams flowing through or past the property – it is all very picturesque. Six months later, the image is very different. The developer will invariably come up with a seemingly simple solution — dig a bore-well.

Unfortunately, even when your bore-well does strike water, there is no guarantee it won't dry up in a few years. The thing is, when water is scarce, everybody and his uncle is boring wells left, right and centre and, chances are, the whole hoard is tapping the same limited resource.

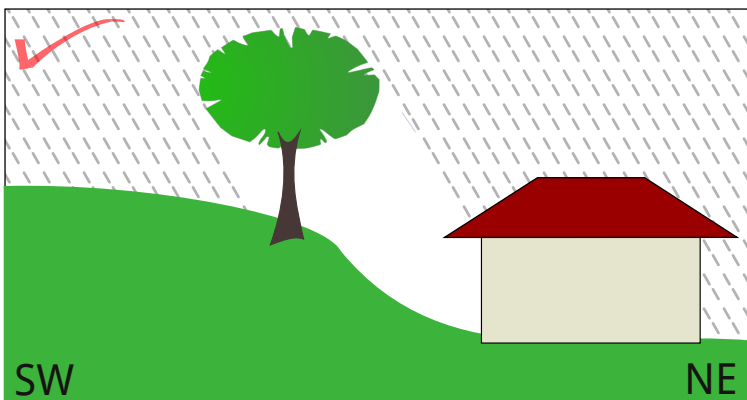
You're often better off digging a surface well and [recharging it with rainwater](#). Vastu advises that a well be dug in the North-East of the property. Since the land is supposed to slope down in that direction anyway, this makes it the lowest point available to you and, therefore, most easily recharged during the monsoon.

The Comfort Zone | Rain, Sun & Wind



On the Indian sub-continent, the monsoon for the most part, blows in from the South-West. So, if you want to protect your house from the driving rain, it makes sense to have a site that slopes down towards the North-East rather than one that takes the downpour straight in the face.

Also the windward face will tend to receive rain at a [sharper angle](#) than the leeward side. On the leeward side of a hill, the rain becomes more vertical and can be easily blocked out using vegetation or architectural features like awnings and recessed windows.



When you build your house, there are three things you need to consider if you want to ensure maximum comfort in a tropical climate. The first, is to keep the rain out to the greatest extent possible. The second, is to avoid the build-up of heat from sunlight and the third, is ventilation.

As far as the amount of light and heat is concerned, it depends a lot on the orientation of a sloping plot. In countries such as India, land sloping away from the equator receives substantially less solar radiation than one that slopes towards it. Carrying this further, as the [hottest time of the day](#) is when the sun lies in the South-West, land should ideally slope down towards the North-East.

This, in fact, is exactly what the Vastu Shastras advise us to look for in a piece of land that we wish to build upon. The only difference is that three thousand years ago, they gave religious reasons for doing so. The layman of that time wasn't going to listen to some "mumbo-jumbo" about the [cosine law of solar radiation](#).

Now, if you have already purchased or selected a place where the levels do not conform to the ideal, you can still minimise the problem. Take precautions like creating deep roof overhangs and awnings and grow a barrier of evergreen trees along the South and West boundaries. Best of all, use the "inauspicious" levels as a bargaining point with the estate agents. Serves them right for foisting the Vastu bogey on us in the first place!

The graphics to the left, show how land sloping down towards the North-East is ideal for protecting your walls from the South-West monsoon. In ancient times, when walls were plastered with mud, this was an extremely important issue. Even today, despite the fact that we have cement plastering available to us, it is still advisable to keep your walls dry – if necessary by having deep overhangs.

This leaves us with the third factor affecting our comfort – that of ventilation. And here is where the one-size-fits-all Vastu rules stumble a bit. Let me tell you why.

Blanket rules can sometimes come unravelling.

The Vastu Shastras never asked us to stop thinking.

Whereas a large part of the country has similar conditions—in varying degrees of course—for sun & rain, when it comes to the direction of prevailing breezes, a lot depends on not just the season but on the micro-climate of the area as well. Adding to this, the fact that the requirements vary for different seasons in various climate types, gets us truly get mired in a plethora of possibilities.

Room Positions | The How & Why

GRANARY » Passably Cool » Fairly Dry » Good Airflow	TREASURY » Ummm...	LIVING » Really Cool » Very Dry » Comfortable
STUDY » Late Sun » Good Airflow » Hot by Day	COURTYARD » Heat-Vent » Light-Well » Multipurpose	DINING » Morning Sun » Abuts Living » Abuts Kitchen
TOOL STORE » V. Hot by Day » Lashing Rain	BEDROOM » Morning Sun » Hot by Day » Good Airflow	KITCHEN » Morning Sun » Good Airflow » Heat Expelled

TYPICAL ROOM POSITIONS AS PER VASTU



While these are supposed to be the ideal locations for rooms within a dwelling, we simply must consider the local climatic data — and of course practicality.

For the [\[PMK\] Bungalow](#) in Pune—which was totally Vastu compliant*—only the Kitchen & Courtyard retained the positions designated above. Fortuitously, there was neither a Granary, nor a Treasury, that needed to be incorporated into the design.

* The Vastu consultant for the [\[PMK\] Bungalow](#) even took the horoscopes of individual family members into account.

We are dealing now with possibly the most critical—and least understood—set of criteria in this entire exercise. We have seen earlier, that the Vastu Purusha Mandala determines the location of a particular room type depending on the resident deity of that space.

For example, Agni which denotes fire, is in the South-East so that is where the kitchen should be – if possible of course. If not, then the kitchen could go to the North-West. Similarly, the toilets can be almost anywhere – except in the South-West or North-East sectors.

Why is this? Well, both the kitchen and the toilets, are sources of odours. If such rooms are to lie upwind of the rest of the home, the environment within could get unpleasant in the extreme.

Placing these rooms on the Northern or Eastern façades, allows the smell to be released directly into open space. The North-East corner, though, is strictly taboo – especially for the toilets, probably because that would be a complete waste of the best part of the house. And there have to be some taboos; otherwise nobody would ever take these rules seriously enough!

For living areas, the North and East are preferred, simply from the point of view of coolness and comfort, while bedrooms are preferred in the hot-in-the-daytime South and West, as they are the only areas which are used more at night. (“What are you doing in bed during the day, you lazy slob... Get up and go to work!”)

I'll admit I have absolutely NO IDEA why the treasury should be in the North!

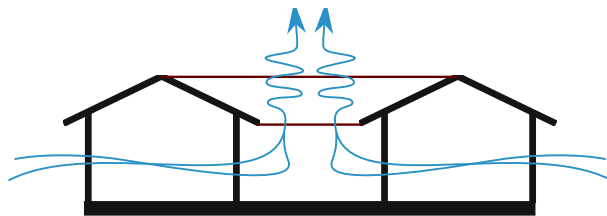
Apart from this, children are advised to sleep with their heads to the West and adults with their heads toward the South. The East is “allowed” but the North is a strict no-no. This has something to do with the earth's magnetic field. Interestingly, old Chinese tradition says you should sleep with your head towards the North! So, to all those who are tying themselves in knots trying to combine the best of Vastu and Feng-Shui... here's some more rope.

I slept with my head to the South as a young child and, later, to the East – with no adverse effect to the best of my knowledge, so I can offer you no scientific proof on sleeping direction, except to suggest that sleeping with your head to the West means you wake up to the morning light – always a good thing. Today, my wife and I do sleep with our heads to the West but, while I often wake up before dawn, she'd like to sleep through half the morn! But jokes apart, people more sensitive than myself might well be affected by sleeping direction. After all, our bodies contain iron and, if the moon—though far—can cause tides, why can't the earth's magnetic field affect us?

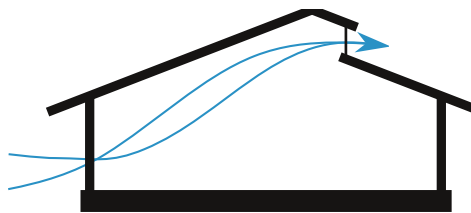
Making the Most of What You Have



GIVING SHADE IN THE SOUTH AND WEST



A COURTYARD AS A HEAT DISSIPATER



CLERESTORY WINDOWS FOR CROSS-VENTILATION

Earlier, we have seen how climate affects a building in most parts of India and how we can minimise the discomfort to ourselves by choosing a patch of land that slopes down towards the North and East. The South and the West are the least pleasant sides of the house. Actually they are also the least acceptable parts of the garden, which is why the Vastu texts advise us to locate the house close to these two boundaries. This leaves the more agreeable North and East sides available for sit-outs and patios.

← A barrier of shade-giving, evergreens in the South and West—especially on a site with a “bad” slope—can be extremely effective. Remember though, that on a small plot of land, you must be careful not to plant trees with strong spreading roots (like Mango, Peepal, Banyan or Neem) too close to the house, as they could cause some major damage to your foundations. According to Vastu, the North and East sides should not have large trees as the East gives you the morning sun and the North gives cool light through the day.

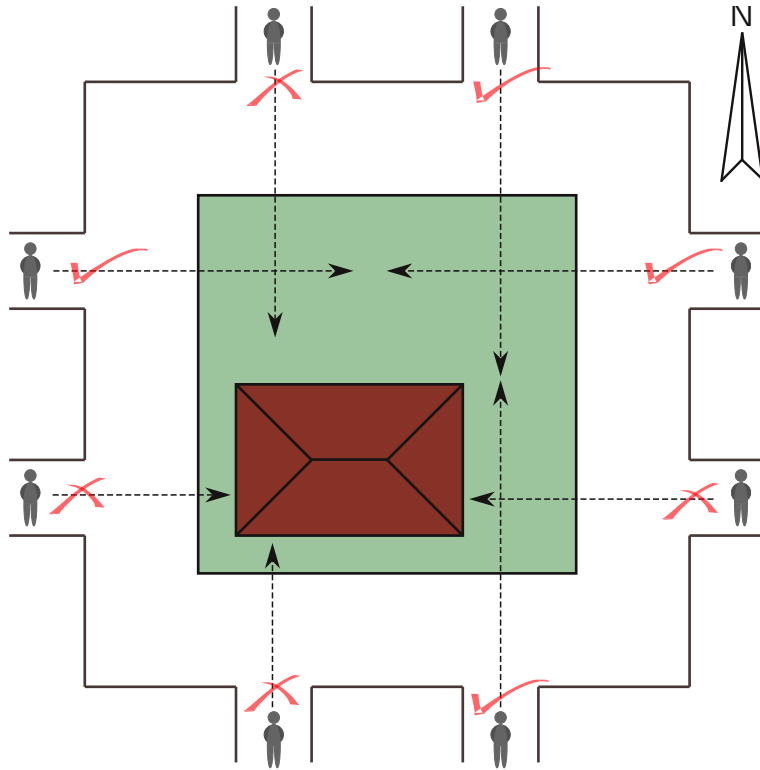
If the plot is a small one—and they often are these days—the available open spaces are barely minimum in any case, so this factor may not come into play at all. Similarly, if a building is within municipal limits of some city or town-planning zone, it will be governed by a set of rules over which neither the owner nor the architect have any control. In either of these two cases, you may just have to grin and bear it. What you can do though, is to try and have the highest point of the structure in the South and West. That way you will obtain maximum shade over the rest of the house. Besides this, the wind pressures should work to your advantage during the hot summer months.

Trees make a **big difference to comfort levels**. They can lower ambient temperatures by as much as 5°C and regulate humidity as well. Flowering trees are usually not **recommended by Vastu**, because they shed their leaves in the summer months – when you most need their shade! Besides, exotic trees like the Gulmohur have a nasty habit of dropping their branches right on your head, at the slightest sign of a strong wind.

← A courtyard, besides being a multi-purpose space that is useful in the daytime, acts as a natural air-vent especially in a hot and dry climate. As the courtyard paving heats up, it creates an updraft that pulls in air from the surrounding rooms, thus setting up a convection current and forcing slow ventilation without electricity. A courtyard created for this very purpose, can be seen at the [\[PMK\] bungalow](#) in Pune.

← Similarly, under more humid conditions where we want quick cross-ventilation, it is easy to create a very good draft by having clerestory windows—or any high-level openings—that allow warm air to escape. This system was used for the [\[RaBV\] bungalow](#) in Karjat.

Veedhi Sulas & Other Sundry Headaches



VEEDHI SULAS

In the hypothetical diagram above, you can see eight approach roads directed at the plot. You will notice that the approaches from which you cannot look directly into the house are the ones that find favour with Vastu.

If you ever find yourself in possession of a plot where the approach road is “unacceptable”, try and shift the gate away from the junction – as much for safety reasons as for privacy. You can also block an outsider's view of your dwelling with plantation or a high compound wall.

Obstructions, or Veedhi Sulas, are said to occur when roads approach the site at right angles. Some of these are considered bad while others are not. By and large, any road from which one can look directly into the house is naturally undesirable. Now since the house is preferably in the South and West, that makes some very specific roads “inauspicious” according to Vastu pundits. The diagram on the left explains it better.

The solution, if you have such a road, is to shift the house slightly – provided you haven't already built it. In an existing house or on a small plot, the suggestion is to shift the main gate and raise the compound wall that's directly in front of the approach road. In any case, it is always better to have your main gate away from a junction.

THE CONCEPT OF GOMUKH & WAGHMUKH

When the entrance side of a residential building is narrower than the rear, it is considered “gomukh”—literally, cow's mouth. This is generally a good thing because the home achieves greater privacy by having a narrow frontage.

The reverse of the gomukh is the “waghmukh”—or tiger's mouth—which is good for commercial spaces like shops where you want a larger frontage to draw in the customers.

Like much else in today's Vastu this, too, has been reduced to tokenism, with people getting worked up about differences of a few millimetres between the front and the back.

AND FINALLY, HERE ARE THE SUNDRY HEADACHES

Water Bodies: Wells and underground tanks should be towards the North and East of the site because (hopefully) these are also the lowest sides.

Overhead tanks are best placed in the North-West, from where any overflow can flow directly towards the North-East without affecting the structure.

Garages and Servant's Quarters: You are advised to have them in the North-West or the South-East corners, preferably without touching the north or east boundaries, in general accordance with the rule about the location of open spaces.

Main Entrance: Ideally, this is located in the North-East sector, so that the rain cannot blow its way into your house. Besides, if that is where you have your garden anyway, it becomes the most pleasant entrance.

FAQs

Are you available for consultation on the Vastu Shastras? What are your fees?

My interpretation of the Vastu Shastras is based on climatic and comfort-zone aspects of the built environment. This is not “Vastu Consultation” as most people (myself included) see it. Therefore, if you want to know where you should place X/Y/Z object for the sake of your health/wealth/happiness, I am the wrong person.

Sustainability and climate-responsiveness are automatically incorporated into the design process at bT Square Peg, so there is no question of extra consultation fees.

I'm going through tough times, so I am reading a lot on Vastu/Feng Shui. Is there something I can do or correct that will boost my career and wealth?

Haven't you read the previous pages in the book? If you have, I must really be a terrible writer!

But seriously; during tough times, the most rational of us could become superstitious – it's a natural human tendency. All I can say is, if a change will make you feel better, go ahead and make it. Often, feeling better is a prelude to doing better. However, if it makes things difficult in any way: visually, practically or even financially, you are better off leaving things alone. This is my opinion and you are welcome to think differently.

Where can I find ready-made plans of Vastu houses?

There are numerous books and internet articles for this. Please remember, though, that the authors of these books usually aren't designers, so don't expect beautiful houses.

Also, the interpretation of Vastu Shastras varies from one "expert" to another and, not surprisingly, from region to region.

Eventually your layout must reflect your own requirements. A ready-made plan can, at best, provide you with a starting point.

Vastu in a Sustainable World

The roots of the Vastu Shastras belong, as we know, to the Vedic period. It was probably refined over some centuries by a process of trial and error and modified for different regions. Besides its basic grounding in climate-related architecture, it went on to encompass engineering, building construction and town planning. It was also responsible for regulating standards in these fields and the best way to enforce them was, of course, to make it a sacred subject – hence the gods.

With time, the reasoning behind the science was lost because nobody thought to question it and all that remained was a shell of superstition. The beauty of it, though, is that even in its hollow form it served its purpose for many centuries – mainly because, until a couple of hundred years ago, people lived very much like their ancestors. After the middle ages, Vastu lost its appeal with the masses and was restricted to temple architecture. Now it is enjoying a tremendous comeback because, as a species, we are frantically searching our past to try and find some meaning in our godless present.

It matters little, that almost nobody who implements the rules of the Shastras understands, in any way, the significance of what they do. It suffices to feel that, having done so, they are somehow immune to all things bad. While there is no doubt that the fundamentals of Vastu are still extremely relevant, they lose much of their true meaning when implemented without reason. Vastu pundits will not explain things to you – they will only repeat their favourite mantra, “You will lose money”. It works every time.

The Vastu Shastras didn't promote sustainability because resources were disappearing – they were not. But in those days, materials were hard to obtain and even harder to transport.

In this day and age, we have so many things that the ancients could never have dreamed of. Today we have running water; we have a sewerage system; we have fans and lights and air-conditioners. We have a whole new range of building materials that nobody ever dreamed of before; we have a totally different set of requirements to match our modern lifestyles. But we still remain as hopelessly superstitious as our “primitive” ancestors.

That, I am afraid, is the tragedy of all our ancient sciences. Instead of building on the fantastic foundations that our forefathers provided, we insist that the plinth is the completed house and, as it is written in the sacred texts, it is sacrosanct. As a result, we are going nowhere at full speed.

This treatise, though brief, is intended to make the reader think and, hopefully, go past the face value of the Vastu Shastras and onward to their ultimate aim – a safe, pleasant and sustainable habitat for us all.

Goodbye and good luck.

Now go burst somebody's Vastu-bubble-of-superstition.

Parallelogram of Forces for Driving Rain

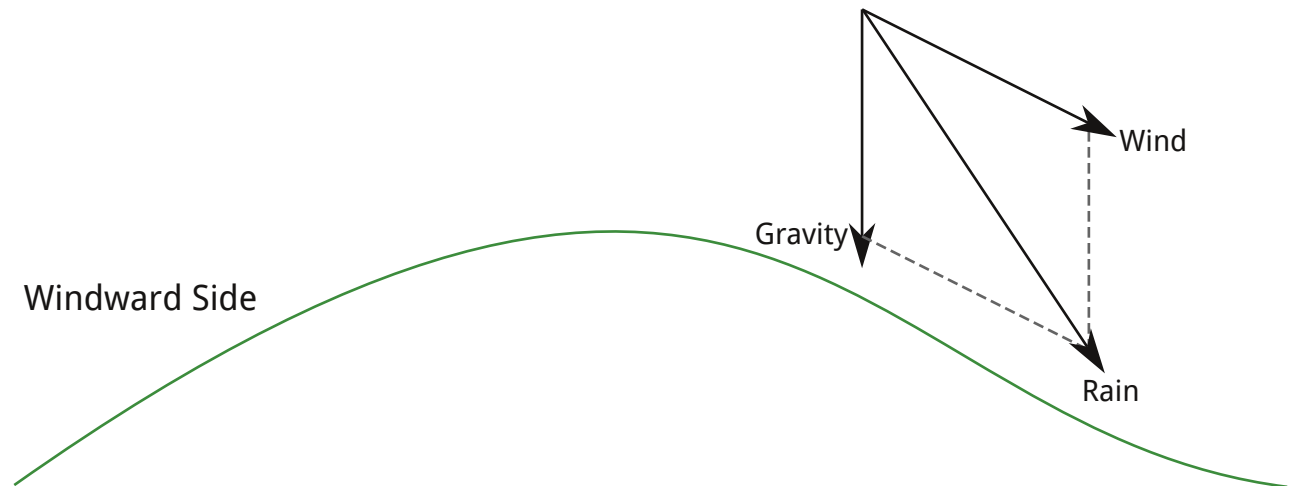
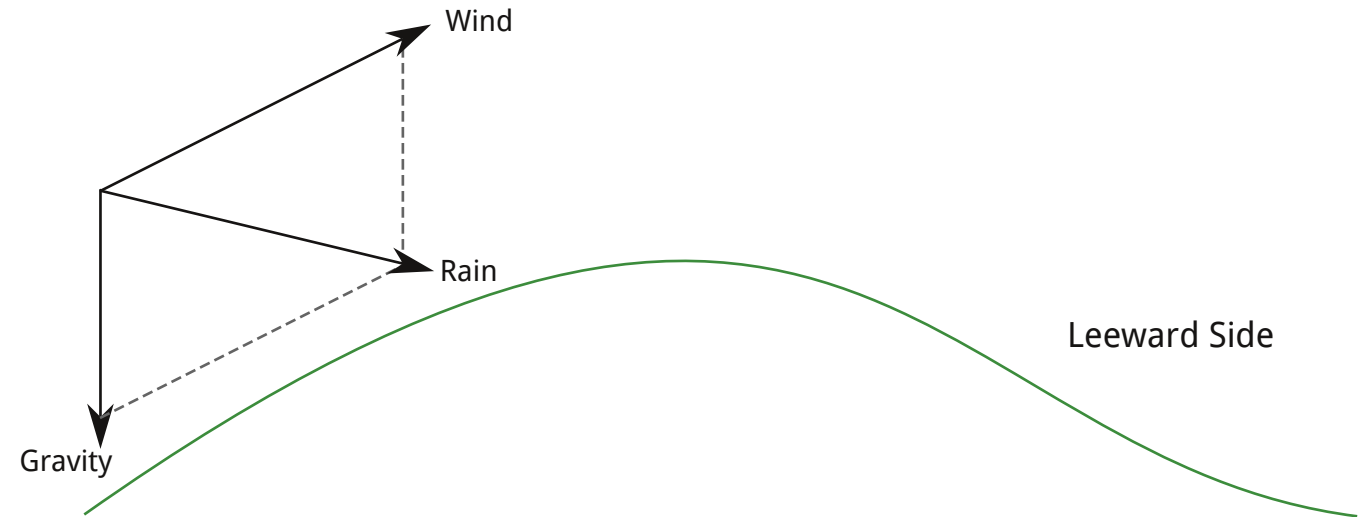
When the wind comes up against a hill or mountain, it pushes in the upward direction and, once it crosses the ridge, loses momentum and starts going downwards.

In the diagram on the right, you will see that while the vector for gravity remains constant, the strength and direction of the wind vector changes.

In the parallelogram, the resultant vector for rain shows how its character changes on the leeward side.

In the Indian subcontinent, strong monsoon winds come from the South-West which is why the Vastu Shastras advise against choosing a site to the South or to the West of a hill.

Of course, if you're in an area where the wind blows consistently from a different direction, please take that into account and adjust accordingly.



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Rain & Shine over the Indian Subcontinent

The sun is the single most important factor to consider when we talk about climate sensitive architecture. In the Northern hemisphere, most places receive the bulk of solar radiation from the Southern side.

There are many places, however, that lie below the Tropic of Cancer at 23.5° N and do, for some days during the summer months, have the sun moving to their North.

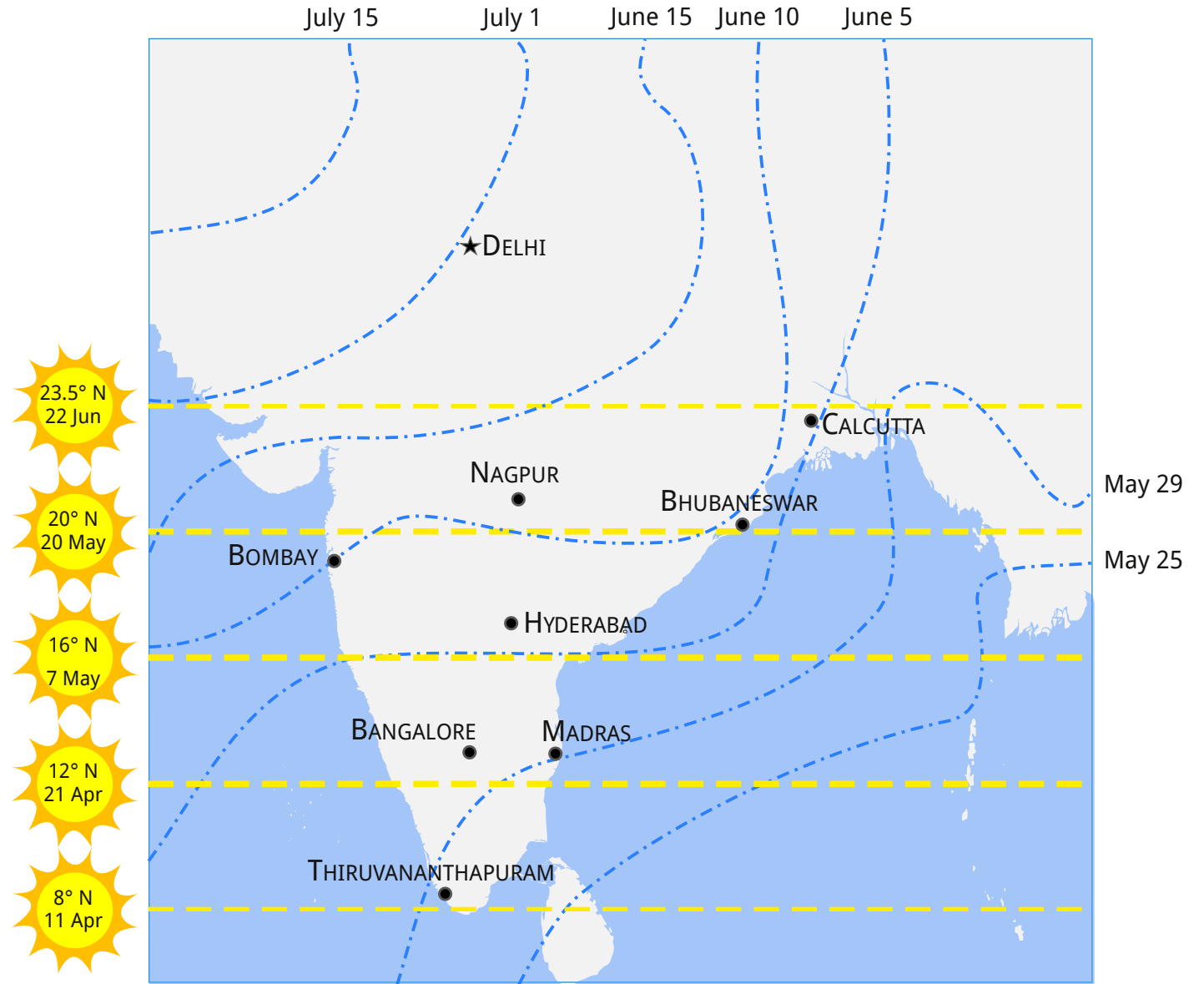
However, as the map on the facing page and the table below show, most of these places quickly get cloud cover; so, unless you are in the far South of the country, you will hardly receive much solar radiation from the North.

Carrying this further, the hottest time of the day is not Noon, but a couple of hours after that - between 2.00 & 3.00pm - when the sun has moved toward the West.

It is for this reason that the South-West is the area where you will almost always receive maximum solar radiation and it is precisely for this reason that the Vastu Shastras have such a strong aversion to this particular direction.

Place	Sun in N.	Clouds after	Rain After
Thiruv'puram	April 14	24 days	42 days
Madras	April 25	16 days	31 days
Bangalore	April 25	19 days	34 days
Hyderabad	May 9	13 days	27 days
Bombay	May 16	7 days	22 days
Bhub'war	May 21	1 days	9 days
Nagpur	May 28	0 days	15 days
Calcutta	June 17	0 days	0 days

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The Cosine Law of Solar Radiation

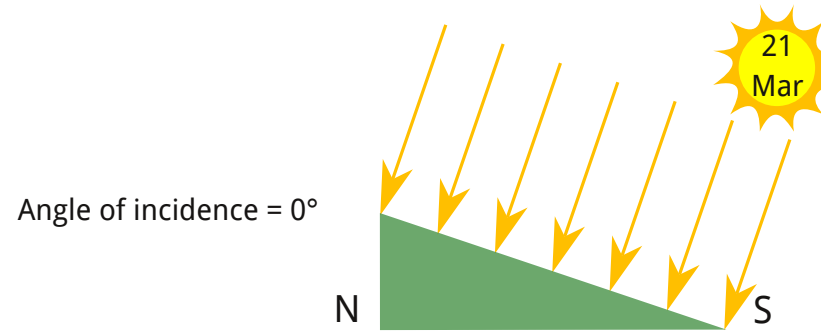
The Cosine Law of Solar Radiation states that the intensity of solar radiation on a surface equals the normal intensity times the cosine of the angle of incidence.

Using this law we will demonstrate that (as an example) on an equinox day, when the sun is directly over the equator and in a place like Bombay which is 19°N latitude, land that is sloping by 1:3 towards the South receives 5.5% more solar radiation than horizontal land and - watch for this - land that slopes by 1:3 towards the North has 21% less solar radiation.

The amount of solar radiation received determines the amount of heat build-up so it doesn't take a genius to put two and two together.

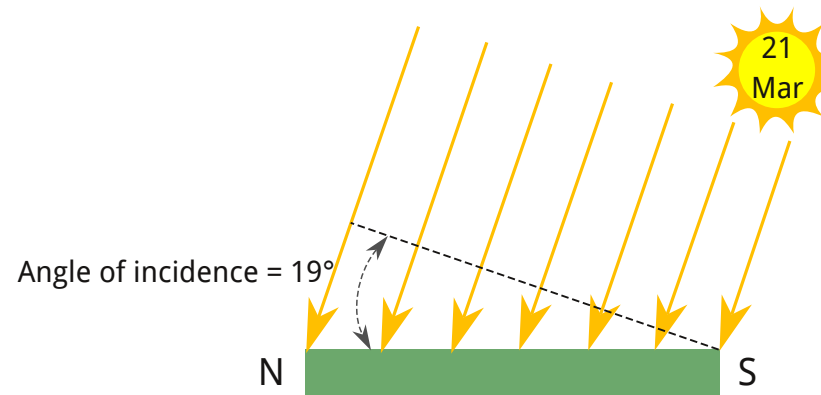
Is it any wonder that the Vastu Shastras keep harping on the fact that you should choose land that slopes towards the North and East?

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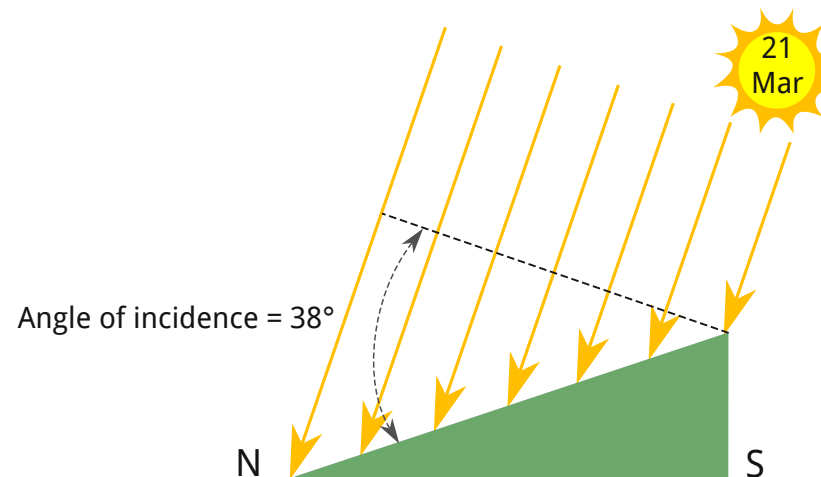
Land slopes 1:3 (19°) towards South
Location: Bombay at 19°N
Angle of Incidence = 0°

Cosine of $0^{\circ} = 1$
Therefore Solar Intensity = 100%
Reduction in Solar Intensity = 0%



Land is flat
Location: Bombay at 19°N
Angle of Incidence = 19°

Cosine of $19^{\circ} = 0.945$
Therefore Solar Intensity = 94.5%
Reduction in Solar Intensity = 5.5%



Land slopes 1:3 (19°) towards North
Location: Bombay at 19°N
Angle of Incidence = 38°

Cosine of $38^{\circ} = 0.788$
Therefore Solar Intensity = 78.8%
Reduction in Solar Intensity = 21.2%

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The Vastu Shastra Top 10 Trees

Here are a few trees, with their salient characteristics, that find a positive mention in the Vastu Shastras. Many have strong spreading roots so you are advised not to plant them too close to your structure.

1. Pipal [Ficus religiosa]

Wonderful shade; wide distribution; strong roots; religious significance

2. Banyan [Ficus bengalensis]

Huge spreading tree; hanging roots; widely grown; long living

3. Mango [Mangifera indica]

Fruit is greatly sought after; wood used for carving

4. Sandal [Santalum album]

Wood prized for its fragrance

5. Gular [Ficus glomerata]

Bark is useful in traditional medicine

6. Jack [Arthocarpus integra]

Common in Konkan; dense foliage; fruit is part of local diet

7. Coconut [Cocos nucifera]

Coastal distribution; every part of the tree is useful - especially the fruit

8. Khair [Acacia catechu]

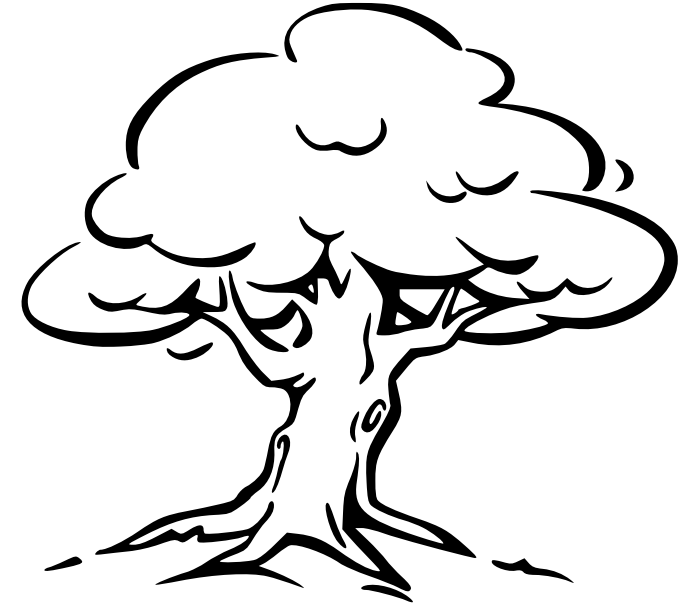
Medicinal properties; wood is resistant to termites

9. Neem [Azadirachta indica]

Spreads wide; fast growing; insect repelling; used in traditional medicine

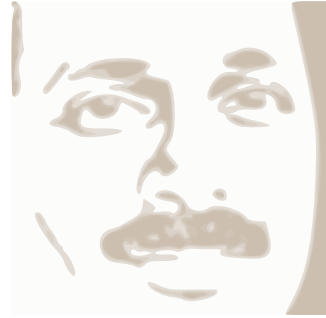
10. Tulsi [Ocimum tenuiflorum]

Shrub, not tree; medicinal properties; can be brewed into a tea; considered an adaptogen



About the Author

Vistasp Mehta is an architect and designer working on sustainable design since 1993 - long before the green movement came to India.



He is especially interested in projects where he can implement conservation measures for energy and water.

Other fascinations include science & technology, photography and natural history.

This book was created using open-source software:



Scribus brings professional page layout to Linux, Mac, and Windows desktops with a combination of press-ready output and new approaches to page design.



Inkscape is a vector graphics editor, with capabilities similar to Illustrator or CorelDraw, and uses the W3C standard Scalable Vector Graphics (SVG) file format.



Paint.NET is a free image & photo editing software for Windows. It features an intuitive and innovative interface with support for layers, special effects, and a wide variety of useful and powerful plugins.

bT Square Peg & Sustainable Design

Every material used in construction comes, eventually, from the earth. For any architect who cares about nature, that is a predicament to be faced every day. While it is unrealistic to halt the production or extraction of such materials we should, at the very least, try and minimise their usage.

Nature has an enormous ability to repair herself but when we exceed her capacity to do so, this cycle of restoration and renewal is irreparably broken. Sustainable architecture and design takes into consideration all aspects of construction that affect the natural environment.

There are innumerable factors that help us make a building nature-friendly and the main ones are:

- Using Sustainable Materials
- Better Design & Construction Methods
- Saving Energy
- Saving Water
- Recycling and Reusing Waste

If you're interested, there is a whole section on sustainable design on the [bT Square Peg website](#).

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