

Effect Of Geology On Vegetation

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M Arch Landscape
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Context

Site : **Sinhgad, Pune, Maharashtra.**

25 km from Pune located in the Sahayadri mountain ranges, about 50 km away to the east of the crest line of western ghats.

The plateau at the top is at the elevation of 1300 m from MSL and the base is at 700m from MSL.

Geological structure of Sinhgad is of typical Deccan trap, It has a rugged, mountainous topography.

Rock is hard basalt rock.



Hilly terrain of Sinhgad



Area under study: Almost flat area near the *Kalyan Drawaja*.

- Approximate area : 44000 sq. m
- This is the hardest layer at the and top.
- The top zone (1100m – 1300m) consists of mainly vertical cliffs and moderately flat rocky top of the fort.
- The soil cover exists only within the cracks.
- The climatic conditions in this zone is extreme and the rain fall is also
- higher than the base.

**Satellite image of
Sinhgad, *Kalyan Drawaja***



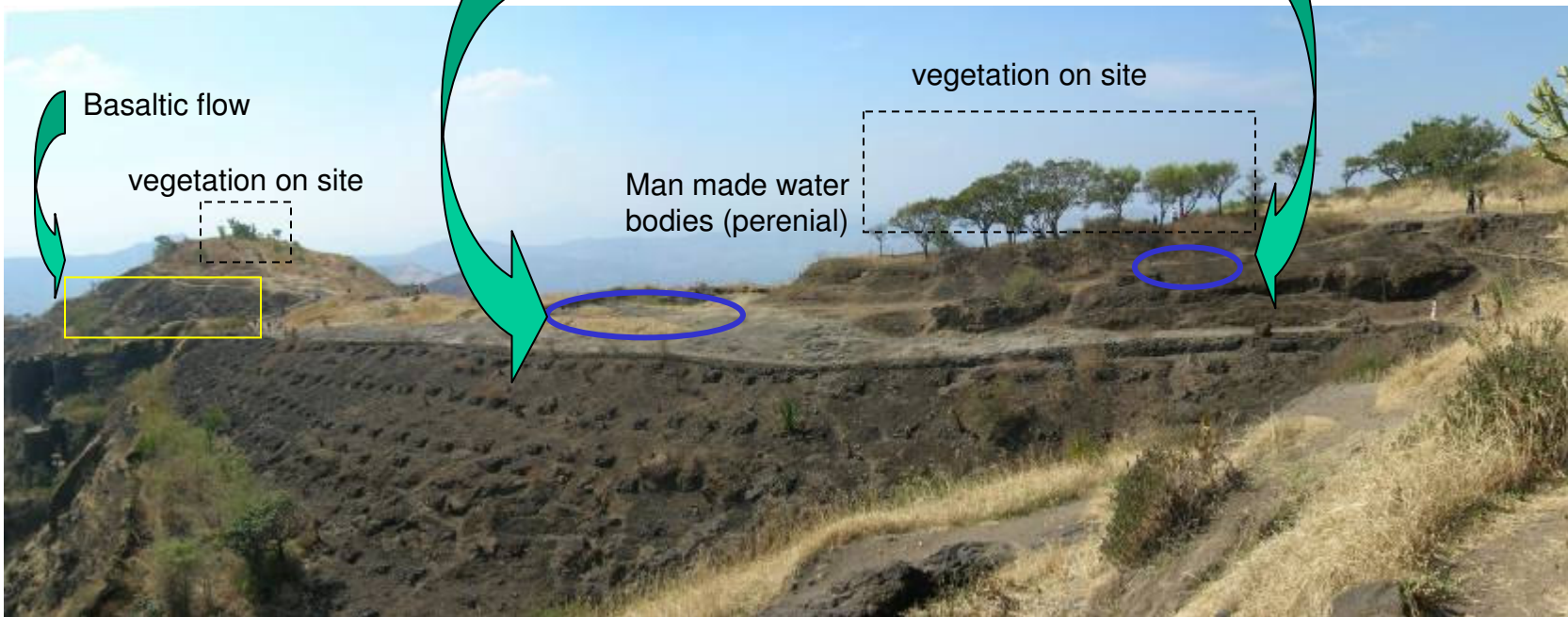
Topography and features on the site



Dried Grassland – Dominant vegetation on site



Man made water bodies (perennial)



View of the area under study

Basaltic flow

vegetation on site

vegetation on site

Man made water bodies (perennial)

Following are the variations in basalt seen on the site.



Features on the site –



Cracks developed in basalt as a result of expansion and contraction due to temperature

Soil conditions on site

Man made perennial pond



Seasonal ponds



Marshy area

Shrubs and Grasses on the site –

- The dominant flora at the top consists of mainly small seasonal herbs.
- The soil layer is thin on the top, almost negligible and mainly in the crevices of the rock
- Hence, there is very scarce vegetation and grass is the dominant vegetation
- The existing vegetation is dominated by xerophytes, cactuses and acacia species.



Boganwellia



Aquatic plants in the water body



Jamun tree (Syzygium cumini)



Xerophytes growing on the site



- Jamun is pioneer tree of dry deciduous forest
- Frequently found on disturbed sites.
- It prefers loamy or sandy soils
- Fast growing tree
- On poor rocky ground it remains stunted.

Shrubs and Grasses on the site –



Celosia argentea

Abounded in dry west lands



Acacia sp.



Senecio edgeworthii

Common in rock crevices
on hill slopes



Bamboo



**Vegetation grown in
cracks of basalt**