

METHODS CONTROLLING DUST AND ATMOSPHERIC POLLUTION IN THE MANUSCRIPT LIBRARIES

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Dust is very common and is often not paid attention to. And Dust is highly dangerous for our manuscripts collections.

WHERE DOES DUST COME FROM?

- Atmosphere/ Air/ Winds
- Traffic on roads
- Shoes of Visitors and Staff
- Clothes of Visitors and Staff
- Hands
- Carpets
- Construction Material

WHAT IS DUST?

Dust consists of very small particles which contain soot (carbon, tarry products & oils) iron oxide, fungus spores, moisture, among other things.

WHAT PROBLEMS DO THIS CONSTITUENTS CAUSE?

Soot: Soot sticks to objects and becomes very difficult to remove. Soot is very absorbent. The sulphur dioxide in the air forms sulphuric acid which is absorbed by the soot forming a type of acid compress. This means that the acid will keep acting on the object over which soot is deposited.

Iron oxide: Iron oxide causes small brown rust spots on the paper manuscripts. Iron oxide also helps in the formation of acids by acting as a catalyst for chemical reactions between sulphur dioxide and moisture in the air.

Fungus spores: The Fungus spores as a soon as they find favourable conditions, grow into fungus and spread all over the object (colonisation). Fungus discolours the manuscripts and also releases acids which destroy the manuscripts.

Water or Moisture: Dust particles contain the above mention deteriorants. Apart from these, Dust also acts as a nucleus around which water/moisture collects. This moisture provides the necessary humidity for growth of fungus and for chemical reactions which lead to formation of acids.

ATMOSPHERIC POLLUTION

Dust is one of the components of atmospheric pollution. The other components are:

Sulphur Dioxide- Sulphur Dioxide combines with moisture and iron oxide present in dust particles to form sulphuric acid. This acid is absorbed by fibres of the manuscripts and destroys the cellulose bonds thus weakening the manuscripts until it becomes brittle and crumbles away.

Hydrogen Sulphide- Hydrogen Sulphide acts on silver and lead pigments and changes them to a dark brown colour by a chemical reaction.

Ammonia- This combines with moisture and sulphur dioxide to form ammonium sulphate which being hygroscopic absorbs moisture.

Nitrogen oxides- Emitted by motor vehicles, this gas destroys the dyestuff used on the manuscripts.

CONTROL OF DUST AND ATMOSPHERIC POLLUTION

- Dust and atmospheric pollution should first of all be eliminated by not having the collection in a dusty area or polluted area.
- The area around the building should be made dust free, as much as possible by planting grass, broad leafed trees, creating a leafy barrier between traffic and the building.
- Important collections should be in the inner rooms.
- The windows should not be left open unnecessarily.
- An air curtain could be provided at the entrance.
- A series of door mats should be provided as one proceeds to the collection room. These mats should also be cleaned regularly.
- The manuscripts should be kept in a closed showcase.
- There should be a distance between the visitor and the object.
- The manuscripts should be covered when not being used or viewed.

- Clean room furniture with a damp cloth.
 - Use vacuum cleaner if possible. One must be careful not to switch on the exhaust by mistake.
 - Sweep floors slowly with broom hugging the ground.
 - Fine water sprays can be used to wash the air before it is brought into the air conditioning system. Almost all of the Sulphur dioxide and dust can be eliminated in this manner.
 - The air intake in AC plants should be high up and should be in the least polluted side of the building e.g. the side not facing the traffic.
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