DUST KINGDOM
Landscape Architecture in the Sonoran Desert

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WHY SHOULD LANDSCAPE ARCHITECTURE BE PART OF THE DUST CONVERSATION?
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The field of landscape architecture promotes methods to incorporate experiential and aesthetic qualities into already-existing dust mitigation and awareness strategies.
DESIGN INTERVENTION

A. encourage dust deposition

B. stabilize the ground
encourage deposition:
CHANGE TOPOGRAPHY

ACCUMULATION of FINE PARTICLES in LEE of OBSTACLE WHERE VELOCITY is REDUCED
encourage deposition:
BUILD AN OBSTACLE

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DEPOSITION LIKELY

2-5 H

WIND SHADOW

10-15 H

SOLID FENCE
accumulation of material only on upwind side

POROUS FENCE
accumulation of material on both sides; more on downwind side
encourage deposition:
CHANGE THE “ROUGHNESS”
stabilize ground:
PERENNIAL PSAMMOPHILES
germinated in response to rainfall > 10mm
reach greater soil depths than other plants

ASTRAGALUS MAGDALENAE VAR. PEIRSONII
Peirson’s milkvetch
+ dicot, perennial herb
+ native to Arizona, California, Baja Mexico
+ bloom: December – April (purple)
+ grows at 40 – 250 m elevations

HELIANTHUS NIVEUS SSP. TEPHRODES
Algodones dune sunflower
+ dicot, perennial herb
+ native to Arizona, California, Sonora Mexico
+ bloom: September – May (yellow)
+ grows at 50 – 300 m elevations

PALAFOXIA ARIDA VAR. GIGANTAE
giant Spanish needle
+ dicot, annual / perennial herb
+ native to Arizona, California
+ bloom: February – May (purple, white)
+ grows at 40 – 140 m elevations
seasonal / yearly rotations

June – August: peak dust storm
September – May: Algodones dune sunflower bloom
December – April: Peirson's milkvetch bloom
February – May: Giant Spanish needle bloom

** Dust source: Cleared lands + croplands
seasonal & yearly rotations
staged design intervention
synced with rotations

SEEDED FIELD OF PSAMMOPHILE PERENNIALS
staged design intervention
synced with rotations
staged design intervention
synced with rotations

SEED FIELD ACCUMULATES DEPOSITION
staged design intervention
synced with rotations
staged design intervention
synced with rotations

STAGE 02: STABILIZED DUNE, INCREASED SIZE / QUANTITY
STABILIZED DUNE SYSTEMS:

A. create a new topographic identity for the region and thus, slows the wind and decreases the strength of the storm (MITIGATION)

B. register the phenomenon of dust storms in the Sonoran Desert and thus, a new experience moving through the region (AESTHETIC)

C. become a didactic tool, bringing awareness to the dust storm and the movement of material through the region